

Younghoon Kim (he/him/his)

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RESEARCH INTERESTS

- Modeling and inference for high-dimensional time series (sparse models, dimension reduction, factor models, clustering, graphical models, spectral analysis, change point detection, non-linear models, continuous-time models)
- Computational and theoretical aspects of statistical machine learning (numerical optimization, empirical risk minimization)
- Methodological applications in scientific domains (psychology, neuroscience, psychiatry, finance, and economics)

ACADEMIC EMPLOYMENT

Assistant Professor Aug. 2026 -
Department of Mathematics, University of Alabama (UA), AL, USA

William L. Maxwell Postdoctoral Fellow Jul. 2025 - Jun. 2026
Center for Data Science for Enterprise and Society, Cornell University, NY, USA

- Equivalent to Assistant Research Professor (Fixed-term)

Postdoctoral Associate Jul. 2023 - Jun. 2025
Department of Statistics and Data Science, Cornell University, NY, USA

Postdoctoral Associate Jul. 2023 - Jun. 2025
Division of Biostatistics, Department of Population Health Sciences, Weill Cornell Medicine (WCM), NY, USA (remote)

Research Assistant Aug. 2018 - May. 2023
Department of Statistics and Operations Research, University of North Carolina at Chapel Hill, NC, USA

EDUCATION

Ph.D. in Statistics and Operations Research May 2023
University of North Carolina at Chapel Hill (UNC-CH), Chapel Hill, NC, USA

M.S. in Industrial and Systems Engineering Feb. 2018
Korea Advanced Institute of Science and Technology (KAIST), Daejeon, S. Korea

*B.S. in Industrial Engineering (major),
B.S. in Mathematics (double major)* Feb. 2016
Hanyang University, Seoul, S. Korea

TEACHING

At UA

- *Instructor* Aug. 2026 -
Advanced Mathematical Statistics I (Ph.D.)

At Cornell U.

- *Instructor* Jul. 2023 - Jun. 2026
Applied Time Series Analysis (Master's)

At UNC-CH

- *Graduate student instructor* Aug. 2018 - May 2023
Introduction to Data Models and Inference (Undergraduate)
- *Graduate teaching assistant* Aug. 2018 - May 2023
Decision Models for Business and Economics, Introduction to Data Analysis,

Introduction to Optimization, Introduction to Probability, Methods of Data Analysis (Undergraduate), Time Series Data Analysis, Optimization for Machine Learning and Neural Networks (Master's), Statistical Theory I, Applied Statistics II (Ph.D.)

At KAIST

- Graduate teaching assistant Mar. 2016 - Feb. 2018
Introduction to Operations Research (Undergraduate)

PROFESSIONAL SERVICE *Referee for Journals*

Electronic Journal of Statistics (twice), IEEE Transactions on Signal Processing (once), Journal of the American Statistical Association (twice), Journal of Computational and Graphical Statistics (twice), Journal of Educational and Behavioral Statistics (twice), Journal of the Korean Statistical Society (multiple times), Journal of the Royal Statistical Society Series B (once), Statistica Sinica (once)

PUBLICATIONS

8. **Kim, Y.***, Deb, N.*, and Basu, S. (2025). cxreg: An R Package for Complex-Valued Lasso and Graphical Lasso, *Accepted at Journal of Open Statistical Software*.
7. Qiu, Y., Carter, E., Benda, N., Sirey, J.A., Kim, S., **Kim, Y.**, Yu, Z., Kiosses, D.N., Marino, P., Alexopoulos, G.S., Faith, G.-D., and Banerjee, S. (2025). Improving Adherence to Psychotherapy and Clinical Outcome in Patients with Late-Life Depression through Gamified mHealth Technology, *American Journal of Geriatric Psychiatry*, 34(4): 568-579.
6. **Kim, Y.**, Düker, M. C., Fisher, Z. F., and Pipiras, V. (2026). Latent Gaussian Dynamic Factor Modeling and Forecasting for Multivariate Count Time Series, *Journal of Time Series Analysis*, 47(1): 43-58.
5. **Kim, Y.**, Basu, S., and Banerjee, S. (2025). A Co-Segmentation Algorithm to Predict Emotional Stress from Passively Sensed mHealth Data, *Statistics in Medicine*, 44(10-12): e70099.
4. **Kim, Y.**, Fisher, Z. F., and Pipiras, V. (2024). Group Integrative Dynamic Factor Models with Application to Multiple Subject Brain Connectivity, *Biometrical Journal*, 66(8): e202300370.
3. Fisher, Z. F., **Kim, Y.**, Pipiras, V., Crawford, C., Petrie, D., Hunter, M., and Geier, C. (2024). Structured Penalization of Heterogeneous Time Series, *Multivariate Behavioral Research*, 59(6): 1270-1289.
2. Fisher, Z. F., **Kim, Y.**, Fredrickson, B. L., and Pipiras, V. (2022). Penalized Estimation and Forecasting of Multiple Subject Intensive Longitudinal Data, *Psychometrika*, 1-29.
1. Ahn, D., Kim, K.-K., and **Kim, Y.** (2020). Small-Time Smile for the Multifactor Volatility Heston Model, *Journal of Applied Probability*, 57(4): 1070-1087.

PREPRINTS

7. Crawford, C., Düker, M. C., **Kim, Y.**, Pipiras, V., and Fisher, Z. F. (2026). Analytic Standard Errors for Latent Gaussian Discrete-Valued Multivariate Time Series
6. Deb, N.*, **Kim, Y.***, and Basu, S. (2026). Inference for High-Dimensional Sparse Spectral Precision Matrices

*Equal contribution

5. Bowling, C.B., Levitan, E.B., Ringel, J.B., **Kim, Y.**, Enogela, E.M., Goyal, P., Glover, L., Reid, R.-J., Sterling, M.R., Safford, M.M., and Banerjee, S. (2026). Characterizing Reserve Across Multiple Domains among Older US Adults: Findings from the REGARDS Study.
4. **Kim, Y.**, and Baek, C. (2026). Latent Community Paths in VAR-Type Models via Dynamic Directed Spectral Co-Clustering.
3. **Kim, Y.**, Basu, S., and Banerjee, S. (2025). Identification of Emotionally Stressful Periods Through Tracking Changes in Statistical Features of mHealth Data.
2. **Kim, Y.**, Fisher, Z. F., and Pipiras, V. (2025). Joint Modeling and Inference of Multiple-Subject High-Dimensional Sparse Vector Autoregressive Models.
1. **Kim, Y.**, Loh, P.-L., and Basu, S. (2025). Exact Coordinate Descent for High-Dimensional Regularized Huber Regression.

PRESENTATIONS

22. Recent Advancement of Multiple-Subject High-Dimensional Sparse Vector Autoregressive Models, *Modern Modeling Methods (M3) Conference*, New York City (US), Jun. 2026
21. Identification of Emotionally Stressful Periods Through Tracking Changes in Statistical Features of mHealth Data^{†§}, *International Workshop in Sequential Methodologies (IWSM)*, Washington D.C. (US), Jun. 2026
20. Inference of Sparse Spectral Precision Matrices in High Dimension, *Eastern North American Region Meetings (ENAR)*, Indianapolis (US), Mar. 2026
19. Dynamic Spectral Co-Clustering of Directed Networks to Unveil Latent Community Paths in VAR-Type Models^{†§}, *Institute for Mathematical and Statistical Innovation (IMSI) Workshop at "Recent Advances in Random Networks: Theory and Applications"*, Chicago (US), Jan. 2026
18. Dynamic Spectral Co-Clustering of Directed Networks to Unveil Latent Community Paths in VAR-Type Models^{†§}, *NBER-NSF Time Series Conference*, New Brunswick (US), Sep. 2025
17. Digital Biomarker Discovery of Emotional Stress Periods through Change Point Detection and Supervised Machine Learning[†], *Joint Statistical Meetings (JSM)*, Nashville (US), Aug. 2025
16. Exact Coordinate Descent for High-Dimensional Regularized Robust M-Estimators[†], *International Conference on Extreme Value Analysis (EVA)*, Chapel Hill (US), Jun. 2025
15. Joint Modeling and Inference of Multiple-Subject High-Dimensional Structural Sparse Vector Autoregressive Models[†], *New England Statistics Symposium (NESS)*, New Haven (US), Jun. 2025
14. Joint Modeling and Inference of Multiple-Subject High-Dimensional Structural Sparse Vector Autoregressive Models^{†§}, *The 10th Workshop on Biostatistics and Bioinformatics*, Atlanta (US), May 2025
13. Latent Gaussian Dynamic Factor Modeling and Forecasting for Multivariate Count Time Series[†], *Virtual Workshop for Junior Researchers in Time Series*, virtual, Apr. 2025
12. Digital Biomarker Discovery for Predicting Behavioral Marker: Emphasis on Emotional Stress Period Detection[†], *Eastern North American Region Meetings (ENAR)*, New Orleans (US), Mar. 2025

[†]Invited

[‡]Competitive session

[§]Competitive funding supported

11. Detecting emotionally stressful periods from passive sensing data via mHeath devices[†], *International Conference on Health Policy Statistics (ICHPS)*, San Diego (US), Jan. 2025
10. Identifiable Multiple-Subject High-Dimensional Time Series Modeling and its Application to Neuroimaging Studies^{‡§}, *Institute for Mathematical and Statistical Innovation (IMSI) Workshop at “Challenges in Neuroimaging Data Analysis”*, Chicago (US), Aug. 2024
9. Latent Gaussian Dynamic Factor Models for High-Dimensional Count Time Series, *Joint Statistical Meetings (JSM)*[†], Portland (US), Aug. 2024
8. Detecting Emotionally Stressful Periods from Passive Sensing Data via Mobile Devices, *Thomas R. Ten Have (TTH) Symposium on Statistics in Mental Health*[†], New York City (US), Jun. 2024
7. Detecting Emotionally Stressful Periods from Passive Sensing Data via Mobile Devices, *Eastern North American Region Meetings (ENAR)*, Baltimore (US), Mar. 2024
6. Group Integrative Dynamic Factor Models with Application to Multiple Subject Brain Connectivity, *Joint Statistical Meetings (JSM)*, Toronto (Canada), Aug. 2023
5. Modeling High-Dimensional Time Series with Heterogeneous Structures, *Colloquium at Hanyang University*[†], Seoul (S. Korea), Dec. 2022
4. Latent Gaussian Dynamic Factor Modeling and Forecasting for Multivariate Count Time Series, *The International Conference on Advances in Interdisciplinary Statistics and Combinatorics (AISC)*, Greensboro (US), Oct. 2022
3. Group Integrative Dynamic Factor Models for Intra- and Inter-Individual Brain Networks, *Grad Student Seminar at UNC-CH*, Chapel Hill (US), Sep. 2022
2. On Implied Volatility Asymptotics under the Multifactor Volatility Heston Model, *Korean Institute of Industrial Engineers*, Daejeon (S. Korea), Nov. 2017
1. Solving Medical Staff Operations Problem for Revenue Management in Emergency Department via Simulation Optimization, *The 7th Capstone Design Fair at Hanyang University* (S. Korea), Nov. 2015

SOFTWARE PACKAGES

3. **rome** (RObust M-Estimator): A C-based R package for fitting penalized robust regression models.
2. **cxreg** (CompleX-valued REGression): A Fortran-based R package for estimation and inference in complex-valued penalized regression (Lasso) and penalized Gaussian likelihood models (graphical Lasso).
1. **multivar** (multiple-subject VAR): A C++-based R package for simulation, estimation and forecasting joint stationary vector autoregressive (VAR) models across multiple subjects.

COMPUTING SKILLS

R, MATLAB, C/C++, Python, Fortran, Shell script, VBA, LaTeX

LANGUAGES

English (Fluent), Korean (Native)

NON-ACADEMIC ACTIVITIES

President of Korean Association of Students and Scholars at UNC-CH (May 2020 - May 2022)

Last update: Jul. 2026