Hang J. Kim
Curriculum Vitae

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Name: Hang Joon Kim

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Educational Background

2012 Ph.D., Statistics, Ohio State University, Columbus, OH
Thesis: *The Generalized Multiset Sampler: Theory and Its Application*
Advisor: Steven N. MacEachern

2006 M.S., Statistics, Yonsei University, Seoul, Korea

2002 B.A., Applied Statistics; B.A, Business, Yonsei University, Seoul, Korea

Academic Appointments

2025 – Present University of Cincinnati, Department of Mathematical Sciences
Professor

2021 – 2025 University of Cincinnati, Department of Mathematical Sciences
Associate Professor

2022 – 2024 University of Cincinnati, Department of Mathematical Sciences
Undergraduate Program Director in Statistics

2015 – 2021 University of Cincinnati, Department of Mathematical Sciences
Assistant Professor

2012 – 2015 Duke University & National Institute of Statistical Sciences, NC
Postdoctoral Fellow (Advisors: Jerome P. Reiter and Alan F. Karr)

Other Professional Positions

2022 – 2025 Visiting Associate Professor (courtesy),
Yonsei University and Kyungpook National University, Korea

2022 Visiting Research Fellow, Institute of Basic Science, Korea

2021 – 2022 Faculty Fellow, NSF–NCSES Research Ambassadors Program,
National Center for Science and Engineering Statistics

2018 – 2020 ASA/NSF/Census Research Fellow, U.S. Census Bureau, DC

Honors and Awards

Industrial Service Medal of Honor, President of the Republic of Korea, 2024
: for the national recognition of contributions to research in data editing and data confidentiality, and collaboration with the national statistical agency

A&S Rising Star Award, College of Arts and Sciences, University of Cincinnati, 2018

Summer at Census Scholar, U.S. Census Bureau, 2017

KISS Career Development Award, Korean International Statistical Society, 2015

American Statistical Association Student Paper Award, Section on Bayesian Statistical Science, 2012

Whitney Award for Best Dissertation Research, Ohio State University, Dept. of Statistics, 2012

American Statistical Association Travel Award, Section on Business and Economics Statistics, 2011

Mayers Travel Award, Ohio State University, Division of Natural and Mathematical Sciences, 2011

Whitney Award for Outstanding Consultant, Ohio State University, Dept. of Statistics, 2010

Research Interests

Semiparametric Bayesian modeling; Statistical computing

Causal inference; Meta analysis; Statistical genomics; Missing data

Data privacy; Synthetic data

Survey sampling; Computer experiments

Grants and Research Supports

National Institutes of Health, R01
Fundamental properties of circadian rhythms
Role: Co-Investigator | **Period**: 9/10/2025 – 7/31/2029 | **Amount**: $1,520,356 | **Status**: Active

National Research Foundation of Korea (subaward through Kyungpook National University)
Statistically synthetic data generation and its statistical inference for official statistics
Role: Principal Investigator | **Period**: 3/1/2025 – 2/29/2028 | **Amount**: $101,351 | **Status**: Active

National Science Foundation, Division of Mathematical Sciences (through Ohio State U.)
Robust and efficient Bayesian inference for misspecified and underspecified models
Role: Principal Investigator | **Period**: 7/1/2024 – 6/30/2027 | **Amount**: $90,423 | **Status**: Active

Patient-Centered Outcomes Research Institute (through University of California, San Francisco)
Mixed data meta-analysis: Integration of individual participant and aggregate data
Role: Principal Investigator | **Period**: 11/1/2021 – 10/31/2024 | **Amount**: $109,134
| **Status**: Completed

National Institutes of Health, R01 (through Ohio State University)

Statistical models for genetic studies, using network and integrative analysis

Role: Principal Investigator | **Period**: 1/1/2020 – 04/30/2021 | **Amount**: $32,997 | **Status**: Completed

ASA/NSF/Census Research Fellowship

Statistically integrated publication system for the Economic Census synthetic microdata

Sponsors: NSF and U.S. Census Bureau | **Role**: Principal Investigator | **Period**: 4/30/2018 – 1/30/2020 | **Amount**: $170,379 | **Status**: Completed

Publications in Peer-Reviewed Journals

† corresponding author * PhD advisee

1. **Kim, H. J.**†, MacEachern, N. M., Kim, Y. M., and Jung, Y. (2026), Kernel density estimation with a Markov chain Monte Carlo sample, *Computational Statistics and Data Analysis*, 214, 108271

2. Huang, Y., **Kim, H. J.**, Huang, C-Y., and Kim, M-O.† (2025), Bayesian random-effects meta-analysis integrating individual participant data and aggregate data, *Journal of the American Statistical Association*, 120, 2128-2139

3. Hwang, Y.†, **Kim, H. J.**, Chang, W., Hong, C., and MacEachern, S. N. (2025), Bayesian model calibration and sensitivity analysis for oscillating biological experiments, *Technometrics*, 67, 333-343

4. Chang, W., Hwang, Y., and **Kim, H. J.**† (2025), Physics-driven dynamic interpolation with application to pollution satellite images, *Spatial Statistics*, 69, 100923

5. Lim, Y., **Kim, H. J.**, and Hwang, B. S.† (2025), Nonparametric Bayesian latent class model for longitudinal zero-inflated count data, *Journal of Nonparametric Statistics*, `https://doi.org/10.1080/10485252.2025.2576122`

6. Ji, E., Ohn, J. H., Jo, H., Park, M-J., **Kim, H. J.**, Shin, C. M.†, and Ahn, S.† (2025), Evaluating the utility of data integration with synthetic data and statistical matching, *Scientific Reports*, 15:19627

7. Lee, S., Chae, S. J., Jang, I-H., Oh, S-C., Kim, S.-M., Lee, S. Y., Kim, J. H., Ko, J., **Kim, H. J.**, Song, I-C., Kim, J. K.†, and Kim, T-D.† (2024), B7H6 is the predominant activating ligand driving natural killer cell-mediated killing in patients with liquid tumours: evidence from clinical, in silico, in vitro, and in vivo studies, *eBioMedicine*, 110, 105459

8. Park, M-J., **Kim, H. J.**, and Kwon, S.† (2024), Disseminating massive frequency tables by masking aggregated cell frequencies, *Journal of the Korean Statistical Society*, 53, 328-348

9. Zang, H.*, **Kim, H. J.**†, Huang, B., and Szczesniak, R. (2023), Bayesian causal inference for observational studies with missingness in covariates and outcomes, *Biometrics*, 79, 3624-3636

10. Hong, H., Cortez, M. J., Cheng, Y-Y., **Kim, H. J.**, Choi, B.†, Josic, K.†, and Kim, J. K.† (2023), Inferring delays in partially observed gene regulation processes, *Bioinformatics*, 39

11. Deng, Q., Nam, J. H., Yilmaz, A. S., Chang, W., Pietrzak, M., Li, L., **Kim, H. J.**†, and Chung, D.† (2023), graph-GPA 2.0: Improving multi-disease genetic analysis with integration of functional annotation data, *Frontiers in Genetics*, 14:1079198

12. Chen, C., Bin, H., Kouril, M., Liu, J., **Kim, H. J.**, and Sivaganesan, S. (2023), An application programming interface implementing Bayesian approaches for evaluating effect of time-varying treatment with R and Python, *Frontiers in Computer Science*, 5:1183380

13. Wang, Z., **Kim, H. J.**, and Kim, J. K.† (2023), Survey data integration for regression analysis using model calibration, *Survey Methodology*, 49, 89-115

14. An, S., Doan, T., Lee, J., Kim, J., Kim, Y. J., Kim, Y., Yoon, C., Jung, S., Kim, D., Kwon, S., **Kim, H. J.**, Ahn, J.†, and Park, C.† (2023, written in Korean), A comparison of synthetic data approaches using utility and disclosure risk measures, *Korean Journal of Applied Statistics*, 36, 141–166

15. Allen, C., Chang, Y., Neelon, B., Chang, W., **Kim, H. J.**, Li, Z., Ma, Q., and Chung, D.† (2022), A Bayesian multivariate mixture model for high throughput spatial transcriptomics, *Biometrics*, 79, 1775-1787

16. Khatiwada, A., Wolf, B. J., Yilmaz, A. S., Ramos, P. S., Pietrzak, M., Lawson, A., Hunt, K. J., **Kim, H. J.**, and Chung, D.† (2022), GPA-Tree: Statistical approach for functional-annotation-tree-guided prioritization of GWAS results, *Bioinformatics*, 38, 1067–1074.

17. Thompson, K. J.† and **Kim, H. J.** (2022), Incorporating economic conditions in synthetic microdata for business programs, *Journal of Survey Statistics and Methodology*, 10, 830–859.

18. Hu, J.†, Drechsler, J. and **Kim, H. J.** (2022), Accuracy gains from privacy amplification through sampling for differential privacy, *Journal of Survey Statistics and Methodology*, 10, 688–719.

19. **Kim, H. J.**†, Drechsler, J., and Thompson, K. J. (2021), Synthetic microdata for establishment surveys under informative sampling, *Journal of the Royal Statistical Society Series A (Statistics in Society)*, 184, 255–281.

20. Jung, Y.†, MacEachern, S. N., and **Kim, H. J.** (2020), Modified check loss for efficient estimation via model selection in quantile regression, *Journal of Applied Statistics*, 48, 866–886.

21. Hwang, Y., **Kim, H. J.**†, Chang, W., Yeo, K., and Kim, Y. (2019). Bayesian pollution source identification via an inverse physics model, *Computational Statistics and Data Analysis*, 134, 76–92.

22. **Kim, H. J.**†, Lu, B., Nehus, E. J., and Kim, M-O.† (2019). Estimating heterogeneous treatment effects for latent subgroups in observational studies, *Statistics in Medicine*, 38, 339–353.

23. Liu, X., Chen, A., Caicedo-Casso, A., Cui, G., Du, M., He, Q., Lim, L., **Kim, H. J.**, Hong, C., and Liu, Y.† (2019), FRQ-CK1 interaction determines the period of circadian rhythms in Neurospora, *Nature Communications*, 10, 4352.

24. **Kim, H. J.**, Yu, Z., Lawson, A., Zhao, H., and Chung, D.† (2018). Improving SNP prioritization and pleiotropic architecture estimation by incorporating prior knowledge using graph-GPA, *Bioinformatics*, 34, 2139–2141.

25. **Kim, H. J.**†, Reiter, J. P., and Karr, A. F. (2018). Simultaneous edit-imputation and disclosure limitation for business establishment data, *Journal of Applied Statistics*, 45, 63–82.

26. Kortemeier, E., Ramos, P. S., Hunt, K. J., **Kim, H. J.**, Hardiman, G., and Chung, D.† (2018). ShinyGPA: An interactive visualization toolkit for investigating pleiotropic architecture using GWAS datasets, *PLoS ONE*, 13(1): e0190949.

27. Chung, D.†, **Kim, H. J.**, and Zhao, H. (2017). graph-GPA: A graphical model for prioritizing GWAS results and investigating pleiotropic architecture, *PLoS Computational Biology*, 13(2): e1005388.

28. Park, M-J. and **Kim, H. J.**† (2016; written in Korean), Statistical disclosure control for public microdata: present and future, *Korean Journal of Applied Statistics*, 29, 1041–1059.

29. **Kim, H. J.**†, Cox, L. H., Karr, A. F., Reiter, J. P., and Wang, Q. (2015), Simultaneous edit-imputation for continuous microdata, *Journal of the American Statistical Association*, 110, 987–999.

30. **Kim, H. J.**† and MacEachern, S. N. (2015), The generalized multiset sampler, *Journal of Computational and Graphical Statistics*, 24, 1134–1154.

31. **Kim, H. J.**†, Karr, A. F., and Reiter, J. P. (2015), Statistical disclosure limitation in the presence of edit rules, *Journal of Official Statistics*, 31, 121–138.

32. **Kim, H. J.**†, Reiter, J. P., Wang, Q., Cox, L. H., and Karr, A. F. (2014), Multiple imputation of missing or faulty values under linear constraints, *Journal of Business and Economics Statistics*, 32, 375–386.

Book Chapters or Technical Reports

† corresponding author

33. **Kim, H. J.**, Rotemberg, M., and White, T. K. (2025), Manufacturing Dispersion: How Data Cleaning Choices Affect Measured Misallocation and Productivity Growth in the Annual Survey of Manufactures, Census Working Papers, CES-25-67, U.S. Census Bureau, Washington, DC

34. Abowd, J. A., Benedetto, G. L., Garfinkel, S. L., Dahl, S. A., Dajani, A. N., Graham, M., Hawes, M. B., Karwa, V., Kifer, D., **Kim, H. J.**, Leclerc, P., Machanavajjhala, A., Reiter, J. P., Rodriguez, R., Schmutte, I. M., Sexton, W. N., Singer, P. E., and Vilhuber, L. (2020), The Modernization of Statistical Disclosure Limitation at the U.S. Census Bureau, Census Working Papers, U.S. Census Bureau, Washington, DC

35. Thompson, K. J., **Kim, H. J.**, Bassel, N., Bembridge, K., Coleman, C., Freiman, M., Garcia, M., Kaputa, S., Riesz, S., Singer, P., Valentine, E, White, K. T., and Whitehead, D. (2020), Final Report: Economic Census Synthetic Data Project Research Team, ADEP Working Paper Series ADEP-WP-2020-05, U.S. Census Bureau, Washington, DC

36. Kim, H. J. and Karr, A. F. (2013), The effect of statistical disclosure limitation on parameter estimation for a finite population, Technical Report 183, National Institute of Statistical Sciences, Durham, NC.

37. Bakshi, B. R., **Kim, H. J.**, and Goel, P. K. (2011), Using thermodynamics and statistics to improve the quality of life-cycle inventory data, in *Thermodynamics and the Destruction of Resources*, eds. B. R. Bakshi, T. R. Gutowski, and D. P. Sekulic, Cambridge University Press, pp. 235–248.

Software

clusterMI (ver 1.2.1)

- Allows clustering of incomplete observations by addressing missing values using multiple imputation. Four multiple imputation methods are proposed, two are based on joint modelling, and two are fully sequential methods

synMicrodata (ver 2.0.0)

- Synthetic microdata generator based on a non-parametric Bayesian model for mixed data type (continuous and categorical variables) where missing values exist

GGPA (ver 1.16.0)

- A graphical model for prioritizing GWAS results and investigating pleiotropic architecture, introduced by Chung et al. (2017, *PLoS Comput. Biol.*) and Kim et al. (2018, *Bioinformatics*)

DPImputeCont (ver 1.2.2)

- Imputation engine for continuous data using a Dirichlet process Gaussian mixture model, introduced in Kim et al. (2014, *Bus. Econ. Stat.*)

PhD Student Supervision (with first position)

Jiwon Lee, PhD Student

Yuan Zhou, PhD Student

Ayat Almomani, PhD 2022 (Assistant Professor, Dept. of Statistics, Yarmouk University, Jordan)

Yuan Yuan, PhD 2021 (Global Transaction Banking Dept., Ping An Bank, Shenzhen, China)

Huaiyu Zang, PhD 2020 (Biostatistician II, Cincinnati Children's Hospital Medical Center, OH)

Internal Service

Director / Committe Chair (Academic Year)

Undergraduate Program Director, 22–24

STAT Undergraduate Committee Chair, 19–21, 22–23, 24–25

STAT Graduate Committee Chair, 24–25

STAT Qualifying Exam Committee Chair, 21–22

STAT Prelim Exam Committee Chair, 22–23, 24–25

Committe (Academic Year)

Tenure Track Faculty Hiring Committee, 17–18, 22–23, 24–25

Educator Faculty Hiring Committee, 16–17

Visiting Assistant Professor Hiring Committee, 16–17

Undergraduate Program Committee, 16–19, 21–24

Computing Committee, 17–20, 21–24

Graduate Affairs Committee, 16–17, 18–20

Graduate Student Evaluation Committee, 15–16

STAT Undergraduate Committee, 19–21, 22–23, 24–25

STAT Graduate Committee, 22–25

STAT Qualifying Exam Committee, 15–16, 17–20, 21–24

STAT Prelim Exam Committee, 17–20, 21–24

Teaching Experience (all taught at University of Cincinnati)

Summary of Student Evaluations (out of 5.0 possible maximum score)

Min: 3.6, Q1: 4.5, **Mean: 4.70**, Q3: 5.0, Max: 5.0

Course list

Probability and Statistics I, 1 semester

Probability and Statistics II, 8 semesters

Mathematical Statistics I, 6 semesters

Time Series, 6 semesters

Statistical Consulting, 1 semester

Statistics & Machine Learning, 1 semester

Survey Sampling, 3 semesters

Linear Models and Multivariate Analysis II, 3 semesters

Advanced Theory of Statistics: Decision Theory, 4 semesters

External Service

Statistical Society

Finance Director, Korean International Statistical Society, 2023-2025

Board of Directors, Korean International Statistical Society, 2019-2024

Award Committee / Referee

2024 Privacy and Public Policy Conference abstract referee, Apr 2024

KISS Outstanding Student Paper Committee, Korean International Statistical Society, 2020

NSF Career Award Reviewer, National Science Foundation, 2019

Student Paper Award Committee, Korean International Statistical Society, May 2018

Career Development Award Committee, Korean International Statistical Society, June 2016

SBSS Student Paper Competition Committee, American Statistical Association, Jan 2016

Student Contest Committee, International Conference on Establishment Surveys, Nov 2015

Conference Session Organizer / Chair

Session Chair, 2025 Korean Statistical Society Summer Conference, Gyeongju, Korea, June 2025

Session Chair, 2022 Joint Statistical Meetings, Washington, DC, Aug 2022

Invited Session Organizer, 2020 Virtual Joint Statistical Meetings, Aug 2020

Session Chair, 2017 Joint Statistical Meetings, Washington, DC, July 2017

Session Organizer, 2015 Joint Statistical Meetings, Seattle, WA, Aug 2015

Session Chair, 2013 Joint Statistical Meetings, Montreal, Quebec, Aug 2013

Editorial Board

Associate Editor, *Journal of the Korean Statistical Society* (JKSS), 2023-2025

Journal Referee

American Statistician, *Annals of Applied Statistics*, *Annals of the Institute of Statistical Mathematics*, *Bayesian Analysis*, *Biostatistics*, *BMC Medical Research Methodology*, *Communications for Statistical Applications and Methods*, *Communications in Statistics - Simulation and Computation*, *Computational Statistics and Data Analysis*, *Environmental Engineering Research*, *Journal of Computational and Graphical Statistics*, *Journal of Econometrics*, *Journal of the Korean Data & Information Science Society*, *Journal of Official Statistics*, *Journal of Privacy and Confidentiality*, *Journal of Survey Statistics and Methodology*, *Journal of the American Statistical Association*, *Korean Journal of Applied Statistics*, *PLoS Computational Biology*, *Sankhya B*, *STAT*, *Scandinavian Journal of Statistics*, *Statistical Analysis and Data Mining*, *Statistical Methods in Medical Research*, *Statistics and Probability Letters*, *Survey Methodology*, and *Technometrics*

Affiliation

American Statistical Association, International Society for Bayesian Analysis, Korean International Statistical Society