WENYU (TINA) GAO

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Fretwell 340N, 9201 University City Blvd., Charlotte, NC 28223

ACADEMIC APPOINTMENT

Assistant Professor in Statistics, affiliated with School of Data Science, July 2023 - present
University of North Carolina at Charlotte, College of Science, Charlotte, NC

PostDoc in Biostatistics, Dec 2020 - June 2023
Harvard University, Harvard T.H. Chan School of Public Health, Boston, MA
Advisor: Dr. Jeff Miller

EDUCATION

Ph.D. in Statistics, Aug 2020
Virginia Tech, College of Science, Blacksburg, VA
Advisor: Dr. Inyoung Kim
Dissertation Title: *Advanced Nonparametric Bayesian Functional Modeling*

M.A. in Statistics, Dec 2014
Columbia University, Graduate School of Arts and Sciences, New York, NY

B.S. in Statistics with Double Major in Finance, May 2013
University of Hong Kong, Science Faculty, Hong Kong, Hong Kong

Exchange Study in Department of Statistics and Applied Probability, Jan 2012 - June 2012
University of California, Santa Barbara, College of Letters and Science, Santa Barbara, CA

RESEARCH INTERESTS

- Functional clustering with emphasis in Dirichlet process mixture models
- Dimension reduction in Bayesian approach
- Interaction between statistics and deep learning
- Statistical genetics/genomics
- Business intelligence

GRANTS

- UNC Charlotte School of Data Science, Summer Seed Grant for Data Science (PI, $10,000; May 2024 - Sep 2024): "Unlocking Novel Deep Sea Viral Diversity and Function: Leveraging Statistical and Machine Learning Techniques"

PUBLICATIONS

Peer-Reviewed Journal Articles (Leading statistician*)

- **Gao, W.**, Kim, I., Nam, W., Ren, X., Zhou, W., & Agah, M. (2024). Nonparametric Bayesian functional clustering with applications to racial disparities in breast cancer. *Statistical Analysis and Data Mining: The ASA Data Science Journal, 17*(1), e11657.
- **Gao, W.**, Kim, I., & Park, E. (2023). Nonparametric Bayesian Functional Selection in 1-M Matched Case-Crossover Studies. *Statistical Methods in Medical Research, 32*(1), 133-150. doi: 10.1177/09622802221133553. Epub 2022 Oct 20. PMID: 36267024.
- Wang, Y., Gao, S., & **Gao, W*.** (2021). Investigating dynamic relations between factual information and misinformation: Empirical studies of tweets related to prevention measures during COVID-19. *Journal of Contingencies and Crisis Management, 30*(4), 427-439. doi: 10.1111/1468-5973.12385. PMCID: PMC8652553.
- Kim, I., Shan, L., Lin, J., **Gao, W.**, Kim, B., & Mahmoud, H. (2020). Multiple and Multilevel Graphical Models. *Wiley Interdisciplinary Reviews: Computational Statistics, 12*(5), e1497.

- Li, Z., **Gao, W.***, & Li, X. (2020). Correlations of Permeability and Geological Characteristics based on Mercury Intrusion Data and Hierarchical Statistical Models: A Case Study. *Journal of Energy Resources Technology, 142*(12).
- Liu, R., Liang, J., Cao, J., Zhang, K., **Gao, W.***, Yang, L., Liang, J., & Yu, R. (2019). Understanding Mobile Users' Privacy Expectations: A Recommendation-based Method through Crowdsourcing. *IEEE Transactions on Services Computing, 12*(2), 304-318. doi: 10.1109/TSC.2016.2636285.
- Yu, R., Cao, J., Liu, R., **Gao, W.***, Wang, X., & Liang, J. (2019). Participant Incentive Mechanism Towards Quality-Oriented Sensing: Understanding and Application. *ACM Transactions on Sensor Networks, 15*(2), 1-25. doi: 10.1145/3303703.
- Liu, R., Cao, J., Zhang, K., **Gao, W.***, Liang, J., & Yang, L. (2018). When Privacy Meets Usability: Unobtrusive Privacy Permission Recommendation System for Mobile Apps Based on Crowdsourcing. *IEEE Transactions on Services Computing, 11*(5), 864-878. doi: 10.1109/TSC.2016.2605089.
- Liu, R., Liang, J., **Gao, W.***, & Yu, R. (2018). Privacy-based Recommendation Mechanism in Mobile Participatory Sensing Systems Using Crowdsourced Users' Preferences. *Future Generation Computer Systems, 80*(C), 76-88. doi: https://doi.org/10.1016/j.future.2017.08.055.
- Liu, R., Cao, J., VanSyckel, S., & **Gao, W.*** (2016). *PriMe: Human-centric Privacy Measurement Based on User Preferences Towards Data Sharing in Mobile Participatory Sensing Systems.* Paper presented at IEEE International Conference on Pervasive Computing and Communications (PerCom), Sydney, Australia, 14-19 March (pp. 1-8). IEEE. doi: 10.1109/PERCOM.2016.7456518 *(Acceptance rate ≈ 15%)*

Publications in Progress

- **Gao, W.** & Kim, I. (2024). A Weighted Dirichlet Process Mixture Modeling for Functional Clustering.
- **Gao, W.**, Miller, J., Klein, R., Hähnel, P. & Carter, S. (2024). BBQ: Better Base Qualities for Next-Generation Sequencing.

CONFERENCE PRESENTATIONS

- **Gao, W.**, Miller, J., Klein, R., Hähnel, P. & Carter, S. (2023, February). *BBQ: Better Base Qualities for Next-Generation Sequencing.* Presented in Poster Session at 2024 Statistical Practice in Cancer Conference, Tampa, FL.
- **Gao, W.**, Nam, W., Kim, I., & Zhou, W. (2023, October). *Nonparametric Bayesian Functional Clustering for Breast Cancer Disparities.* Presented in Concurrent Session at the Women in Statistics and Data Science Conference, Bellevue, WA.
- **Gao, W.**, Nam, W., Kim, I., & Zhou, W. (2023, October). *Nonparametric Bayesian Functional Clustering for Breast Cancer Disparities.* Presented in Invited Session at the INFORMS Annual Meeting, Phoenix, AZ.
- **Gao, W.**, Miller, J., Klein, R., Hähnel, P. & Carter, S. (2023, March). *BBQ: Better Base Qualities for Next-Generation Sequencing.* Presented in Contributed Session at ENAR Spring Meeting, Nashville, TN.
- **Gao, W.**, Miller, J., Klein, R., Hähnel, P. & Carter, S. (2023, February). *BBQ: Better Base Qualities for Next-Generation Sequencing.* Presented in Poster Session at the 10th Annual DF/HCC Celebration of Early Investigators in Cancer Research, Boston, MA.
- **Gao, W.**, Miller, J., Klein, R., Hähnel, P. & Carter, S. (2022, August). *BBQ: Better Base Qualities for Next-Generation Sequencing.* Presented in Contributed Session at the JSM, Washington, DC.
- **Gao, W.**, Nam, W., Kim, I., & Zhou, W. (2021, June). *Nonparametric Bayesian Functional Clustering for Breast Cancer Disparities.* Presented in Organized Invited Session at the 4th International Conference on Econometrics and Statistics (EcoSta 2021), Hong Kong, HK (Virtual).
- **Gao, W.**, Nam, W., Kim, I., & Zhou, W. (2019, December). *Nonparametric Bayesian Functional Clustering for Breast Cancer Disparities.* Presented in Organized Invited Session at the 12th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2019), London, UK.
- **Gao, W.**, Nam, W., Kim, I., & Zhou, W. (2019, July). *Nonparametric Bayesian Functional Clustering for Breast Cancer Disparities.* Presented in Contributed Session at the Joint Statistical Meetings, Denver, CO.
- **Gao, W.** & Kim, I. (2019, June). *Nonparametric Bayesian Functional Selection in 1-M Matched Case-Crossover Studies.* Presented in the R.L. Anderson Student Poster Session at Summer Research Conference of the Southern Regional Council on Statistics (SRCOS), Carrolton, KY.
- **Gao, W.** & Kim, I. (2019, March). *Dirichlet Process Modeling for Functional Clustering with Application in*

Matched Case-Crossover Studies. Presented in Contributed Session at ENAR Spring Meeting, Philadelphia, PA.

- **Gao, W.** & Kim, I. (2018, July). *A Weighted Dirichlet Process Mixture Modelling for Functional Clustering.* Presented in Contributed Session at the Joint Statistical Meetings, Vancouver, BC, Canada.
- **Gao, W.** & Kim, I. (2018, March). *Bayesian Nonparametric Functional Models in Matched Case-Crossover Studies.* Presented in Contributed Poster at ENAR Spring Meeting, Atlanta, GA.
- **Gao, W.** & Kim, I. (2017, August). *Flexible Semiparametric Functional Analysis in Matched Case-crossover Studies.* Presented in Topic-Contributed Session at the Joint Statistical Meetings, Baltimore, MD.

TEACHING EXPERIENCES

At UNC Charlotte

- Instructor, STAT 3128 - Probability and Statistics for Engineers, UNC Charlotte, Spring 2024
- Instructor, STAT 3110 - Applied Regression, UNC Charlotte, Fall 2023 & Spring 2024

At Virginia Tech

- Instructor, STAT 3704 - Statistics for Engineering Applications, Virginia Tech, Spring 2018 & Fall 2019
- Recitation Leader, STAT 2004 - Introductory Statistics, Virginia Tech, Spring 2017
- Teaching Assistant, STAT 3704 - Statistics for Engineering Applications, Virginia Tech, Fall 2016
- Teaching Assistant, STAT 5114 - Statistical Inference, Virginia Tech, Spring 2019
- Teaching Assistant, STAT 5314 - Monte Carlo Methods, Virginia Tech, Spring 2019

AWARD AND HONORS

- Women in Statistics and Data Science (WSDS) Student Travel Award, 2023
- Boyd Harshbarger Travel Award, Summer Research Conference, Southern Regional Council on Statistics (SRCOS), 2019
- 2017 SAIG Collaborator of the Year Award, Statistical Applications & Innovations Group (SAIG), Department of Statistics, Virginia Tech, 2017
- Starr Scholarship for Exchange Study, University of Hong Kong, Hong Kong, 2012

REFEREE SERVICES

Statistica Sinica, Journal of Nonparametric Statistics, International Journal of Biostatistics, International Statistical Review, Journal of Biopharmaceutical Statistics, Journal of Korean Statistical Society, Journal of Statistical Computation and Simulation, Communications medicine, PLoS One, IEEE Transactions on Services Computing, and Scientific Reports

PROFESSIONAL SERVICES

- Conference session chairs
  - Concurrent session "Advances in Causal Inference and Treatment Assessment" in 2023 Women in Statistics and Data Science Conference, Bellevue, WA
  - Contributed session "Exact Methods, Network Models, Computational Geometry, Data Visualization" in 2023 ENAR Spring Meeting, Nashville, TN
  - Organized invited session "Hybrid statistical approach for complex data" in 2021 EcoStat, Virtual
  - Contributed session "High Dimensional Data Analysis" in 2018 ENAR Spring Meeting, Atlanta, GA
- High School Math Contest committee, UNC Charlotte, 2023 - present
- President of Mu Sigma Rho National Statistics Honorary Society, Virginia Tech, Sept 2018 - June 2019
  - Organizer of Mu Sigma Rho Colloquium (*Invited Speaker: Jeff Wu*), Virginia Tech, Oct 3, 2019
  - Organizer and Chair of Mu Sigma Rho Colloquium (*Invited Speaker: James O Berger*), Virginia Tech, Apr 4-5, 2019
- Graduate Student Assembly (GSA) delegate for Statistics Department, Virginia Tech, Sept 2017 - May 2019
- GSA member on Campus Development Committee, GSA, Virginia Tech, Sept 2018 - May 2019

TECHNICAL SKILLS

- Knowledgeable on R, Linux, Slurm, Uger, GATK, SAS, JMP, MS Office (Word, Excel, PowerPoint)
- Experience with Python, Matlab, SQL, STATA, SPSS, VBA, Access
- SAS Certified Base Programmer for SAS 9 (Certificate Serial Number: BP047073v9)
- SOA Exam P with grade 10

PROFESSIONAL AFFILIATIONS

- American Statistical Association (ASA), Jan 2017 - present
- Eastern North American Region (ENAR) of the International Biometric Society, Oct 2017 - present
- International Chinese Statistical Association (ICSA), Apr 2024 - present
- Institute for Operations Research and the Management Sciences (INFORMS), Aug 2023 - present
- Mu Sigma Rho, National Statistics Honorary Society, Nov 2017 - present