Curriculum Vitae of YAN SONG, Assistant Professor of Statistics

Personal Information

Department of Statistics,
The University of British Columbia,
Vancouver, BC, Canada V6T 1Z4

+8613051189305
yan.song@stat.ubc.ca
YanSong996.github.io

Research Interests

Spatio-Temporal Statistics; Subsampling Methods; Nonparametric Statistics; Computational Statistics and HPC

My research focuses on spatio-temporal statistics, with an emphasis on the analysis of large- and exa-scale spatio-temporal data arising from climate and environmental sciences, integrating advanced statistical modeling and high-performance computing.

Education

Renmin University of China, Beijing, China

Ph.D., Statistics, 2018 – 2023

- Advisor: Dr. Wenlin Dai, Ph.D.

Beijing Institute of Technology, Beijing, China

B.S., Statistics, 2014 – 2018

Work Experience

The University of British Columbia, Vancouver, BC, Canada

Assistant Professor, Department of Statistics, 2026 – present

King Abdullah University of Science and Technology, Jeddah, Saudi Arabia

Postdoctoral Fellow, Statistics Program, 2023 – 2026

- Advisor: Prof. Marc G. Genton, Ph.D.

King Abdullah University of Science and Technology, Jeddah, Saudi Arabia

Visiting student, Statistics Program, 2022 – 2023

- Advisor: Prof. Marc G. Genton, Ph.D.

Hong Kong Baptist University, Hong Kong, China

Visiting research assistant, Department of Mathematics, 2021 – 2022

- Advisor: Prof. Tiejun Tong, Ph.D.

Honors and Awards

- One of the 5 finalists for the ADIA Lab Best Paper Award 2024 on Climate Science, 2025
- ACM Gordon Bell Prize for Climate Modelling, 2024
- The second prize of Outstanding Papers, National Forum for Doctoral Students in Statistics, 2020
- Outstanding Poster, RUC Youth Forum on Statistics and Data Science, 2020

List of Publications

1. **Yan Song**, Wenlin Dai, and Marc G. Genton (2025), "Large-scale low-rank Gaussian process prediction with support points," *Journal of the American Statistical Association, Theory and Methods*, 120, 1189-1200, DOI: 10.1080/01621459.2024.2403188.
2. Sameh Abdulah, Allison H. Baker, George Bosilca, Qinglei Cao, Stefano Castruccio, Marc G. Genton, David E. Keyes, Zubair Khalid, Hatem Ltaief, **Yan Song**, Georgiy L. Stenchikov, and Ying Sun (2024), "Boosting earth system model outputs and saving petabytes in their storage using exascale climate emulators," in *Proceedings of the International Conference for High Performance Computing, Networking, Storage, and Analysis*, IEEE Press, SC '24, DOI: 10.1109/SC41406.2024.00008.

3. **Yan Song**, Zubair Khalid, and Marc G. Genton (2024), "Efficient stochastic generators with spherical harmonic transformation for high-resolution global climate simulations from CESM2-LENS2," *Journal of the American Statistical Association, Applications and Case Studies*, 119, 2493–2507, DOI: 10.1080/01621459.2024.2360666.

4. Maoyu Zhang, **Yan Song (co-first)**, and Wenlin Dai (2024), "Fast robust location and scatter estimation: a depth-based method," *Technometrics*, 66, 14–27, DOI: 10.1080/00401706.2023.2216246.

5. **Yan Song** and Wenlin Dai (2024), "Deterministic subsampling for logistic regression with massive data," *Computational Statistics*, 39, 707–732, DOI: 10.1007/s00180-022-01319-z.

6. Xiaoyu Liu, **Yan Song**, and Kun Zhang (2024), "An exact bootstrap-based bandwidth selection rule for kernel quantile estimators," *Communications in Statistics - Simulation and Computation*, 53, 3699–3720, DOI: 10.1080/03610918.2022.2110595.

7. Yiping Hong, **Yan Song**, Sameh Abdulah, Ying Sun, Hatem Ltaief, David E. Keyes, and Marc G. Genton (2023), "The third competition on spatial statistics for large datasets," *Journal of Agricultural, Biological and Environmental Statistics*, 28, 618–635, DOI: 10.1007/s13253-023-00584-9.

8. Wenlin Dai, **Yan Song(co-first)**, and Dianpeng Wang (2023), "A subsampling method for regression problems based on minimum energy criterion," *Technometrics*, 65, 192–205, DOI: 10.1080/00401706.2022.2127915.

Under Revision

1. **Yan Song**, Zubair Khalid, and Marc G. Genton, "Online stochastic generators using Slepian bases for regional bivariate wind speed ensembles from ERA5", acceptable after major revision at *Journal of the American Statistical Association, Applications and Case Studies*, arXiv: 2410.08945.

In preparation

1. **Yan Song** and Marc G. Genton, "Robust probabilistic forecasting".

2. Sameh Abdulah, **Yan Song**, Sohayla Khaled, David Helmy, Ying Sun, and Marc G. Genton "TLAR: efficient parallel tile-based dense linear algebra in R".

Grant Applications (Under Review)

1. NSERC Discovery Grant, *Climate Data Emulation, Fusion, and Prediction*
   - Role: Principal Investigator
   - Amount requested: CAD 353, 806
   - Duration: 2026 – 2030

2. BIRS Workshop, *High-Performance Statistical Computing (HPSC): Mathematical and Computational Foundations, Emerging Challenges, and Future Directions*
   - Role: Lead Organizer
   - Year: 2027
   - Location: Banff, Canada

Presentations

1. Joint Statistical Meetings, Boston, Massachusetts, USA, 2026 – *Efficient stochastic generators with spherical harmonic transformation for high-resolution global climate simulations*, invited speaker.

2. Spatio-Temporal Statistics and Data Science (STSDS) Online Seminars, 2026 - *Online stochastic generators using Slepian bases for regional bivariate wind speed ensembles from ERA5.*

3. KAUST Statistics Workshop, Thuwal, Makkah, KSA, 2025 - *Online stochastic generators using Slepian bases for regional bivariate wind speed ensembles from ERA5.*
4. KAUST ASA Student Chapter Research Presentation Session, Thuwal, Makkah, KSA, 2025 - *Online stochastic generators using Slepian bases for regional bivariate wind speed ensembles from ERA5.*
5. The 3rd Joint Conference on Statistics and Data Science in China, Hangzhou, Zhejiang, China, 2025 – *Online stochastic generators using Slepian bases for regional bivariate wind speed ensembles from ERA5.*
6. ADIA Lab Climate Science Best Paper Finalists Webinar Series, 2025 – *Online stochastic generators using Slepian bases for regional bivariate wind speed ensembles from ERA5.*
7. University of British Columbia (UBC) Statistics Webinar, 2025 – *Efficient stochastic generators with spherical harmonic transformation for high-resolution global climate simulations.*
8. University of Georgia (UGA) Statistics Seminar, Athens, Georgia, USA, 2025 – *Efficient stochastic generators with spherical harmonic transformation for high-resolution global climate simulations.*
9. New Jersey Institute of Technology (NJIT) Statistics Seminar, Newark, New Jersey, USA, 2025 – *Efficient stochastic generators with spherical harmonic transformation for high-resolution global climate simulations.*
10. NSF National Center for Atmospheric Research (NCAR) Seminar, Boulder, Colorado, USA, 2025 – *Efficient stochastic generators with spherical harmonic transformation for high-resolution global climate simulations.*
11. KAUST AMCS-STAT Graduate Seminar, Thuwal, Makkah, KSA, 2024 – *Efficient stochastic generators with spherical harmonic transformation for high-resolution global climate simulations from CESM2-LENS2.*
12. Joint Statistical Meetings, Portland, Oregon, USA, 2024 – *Efficient stochastic generators with spherical harmonic transformation for high-resolution global climate simulations from CESM2-LENS2.*
13. KAUST Statistics workshop, Thuwal, Makkah, KSA, 2023 – *Efficient stochastic generators with spherical harmonic transformation for high-resolution global climate simulations from CESM2-LENS2.*
14. KAUST Statistics workshop, Thuwal, Makkah, KSA, 2022 – *Large-scale low-rank Gaussian process prediction with support points.*
15. National Forum for Doctoral Students in Statistics, Guangzhou, Guangdong, PRC, 2020 – *A model-free subsampling method based on minimum energy criterion.*
16. RUC Youth Forum on Statistics and Data Science, Beijing, PRC, 2020 – *A model-free subsampling method based on minimum energy criterion.*

Teaching experiences

1. Instructor, STATV 547P – *Spatial Statistics*, UBC, Spring 2026.
2. Co-instructor, Short Course – *Large-Scale Spatial Data Science*, JSM, 2024.
3. Co-instructor, Short Course – *Large-Scale Spatial Data Science*, Applied Mathematics and Computational Science and Statistics (AMCS-STAT) School, 2024.
4. Guest Lecturer, STAT 330 – *Multivariate Statistics*, KAUST, 2024.
5. Teaching Assistant, *Spatial Statistics*, RUC, 2023.

6. Teaching Assistant, *Asymptotic Statistics*, RUC, 2021 and 2022.
7. Teaching Assistant, *Statistical Learning*, RUC, 2021.
8. Teaching Assistant, *Stochastic Process*, RUC, 2020.

Teaching Certificates

1. Higher Education Teaching Certificate, Harvard's Bok Center for Teaching and Learning, 2026

Skills and capability

Courses

Probability Theory for Data Science, Statistical Models and Inference, Asymptotic Statistics, Stochastic Process for Data Science, Bayesian Modeling and Inference, Computational Skills for Data Science, Advanced Statistical Computation, Nonparametric Function Estimation, Advanced Applied Statistics and Data Analysis, Statistical Learning.

Operating systems

Mac OS, Microsoft Windows, and Linux

Programming languages

C, R, Matlab, and Python

GitHub

Example R and C code can be found at my GitHub profile

Languages

Chinese (mother tongue), English (proficient)

Professional Service

Journal Refereeing

Journal of Computational and Graphical Statistics

Annals of Applied Statistics

IEEE Transactions on Signal Processing

Professional Memberships

American Statistical Association (ASA), Section on Statistics and the Environment (ENVR)

International Statistical Institute (ISI), The International Environmetrics Society (TIES)

Other Professional Service

Co-Founder and Co-Organizer, Spatio-Temporal Statistics and Data Science (STSDS) Online Seminars, 2025 – present

Scholarship and fellowship

- $24,000, Chinese Government Scholarship, China Scholarship Council, 2022
- $1,000, Postgraduate Scientific Research Foundation, Renmin University of China, 2020
- $2,000, Academic Excellence Scholarship, Renmin University of China, 2019, 2020, 2021, 2022, and 2023
- $1,000, Northern Industries Scholarship, Beijing Institute of Technology, 2017