Wookyeong Song

CONTACT INFORMATION

Department of Statistics
University of California, Davis
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Website
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EDUCATION

University of California, Davis, CA

Ph.D. Candidate in Statistics, 2021 - June 2026
Advisor: Professor Hans-Georg Müller

Seoul National University, Seoul, South Korea

B.S. in Statistics and Mathematical Sciences (Double Major), 2021
Advisor: Professor Hee-Seok Oh & Professor Taesung Park

- Grade: Summa cum laude

RESEARCH INTEREST

Metric geometry and statistics; Manifold learning; Latent space representation; Optimal transport; Functional data analysis; Nonparametric statistics; Machine learning; Artificial intelligence; Brain networks

PUBLICATIONS & PREPRINTS

1. **Song, W.**, Dubey, P., Müller, H.-G., & Petersen, A. (2026).
Inference for Fréchet regression,
Submitted. [preprint]
2. Choi, C.[†], **Song, W.**[†], Müller, H.-G., & Park, B. U. (2026).
Additive Fréchet regression of random objects,
Under Major Revision, The Annals of Statistics. [†]Equal Contribution
3. **Song, W.**[†], Zhou, H.[†], Zhou, Y.[†] & Müller, H.-G. (2026).
Non-Euclidean data analysis with metric statistics,
Harvard Data Science Review, *Accepted*. [paper] [code]
4. **Song, W.** & Müller, H.-G. (2026).
ADOPT: Additive optimal transport regression,
AISTATS, *Accepted*. [paper][code]
5. **Song, W.** & Müller, H.-G. (2026).
Inference for dispersion and curvature of random objects,
Journal of the American Statistical Association, 121(553), 729-740. [paper][code]
    - AISTATS 2026 Journal-to-Conference Track
    - Student Paper Award Finalist by ASA Nonparametric Statistics Section, JSM 2024
6. **Song, W.**, Oh, H.-S., Cheung, K. & Lim, Y. (2024).
Multi-feature clustering of step data using multivariate functional principal component analysis,
Statistical Papers, 65(4), 2109-2134. [paper][code]
7. Kim, H.[†], **Song, W.**[†], Choo, W., Lee, S., ..., Park, T., & Jang, J.-Y. (2023)
Development, validation, and comparison of a nomogram based on radiologic findings for predicting malignancy in intraductal papillary mucinous neoplasms of the pancreas: An international multicenter study,
Journal of Hepato-Biliary-Pancreatic Sciences, 30(1), 133-143. [paper]

8. Kang, J., Lee, C., **Song, W.**, Choo, W., ..., Park, T., & Jang, J.-Y. (2020)
Risk prediction for malignant intraductal papillary mucinous neoplasm of the pancreas: logistic regression versus machine learning,
Scientific Reports, 10, 20140. [paper]

Talks

Inference for Fréchet regression

- Joint Statistical Meeting (JSM), Boston, MA (Aug 2026)

ADOPT: Additive optimal transport regression

- The 29th International Conference on Artificial Intelligence and Statistics (AISTATS), Tangier, Morocco. (May 2026)

Inference for dispersion and curvature of random objects

- AISTATS, Journal-to-Conference Track, Tangier, Morocco. (May 2026)
- Joint Statistical Meetings (JSM), Topic-contributed Paper Session, Portland, OR. (Aug 2024)
- Statistics in the Age of AI, George Washington University, DC. (May 2024)
- Princeton Machine Learning Theory Summer School, Princeton University, NJ. (Jun 2023)

Multi-feature clustering of step data using multivariate functional principal component analysis

- Fall Korean Statistical Society Conference, University of Seoul, South Korea. (Nov 2019)

Honors & Awards

UC Davis Graduate Studies Travel Award	2026
IMS Hannan Graduate Student Travel Award, *Institute of Mathematical Statistics*	2026
Peter G. Hall Award, *Department of Statistics, UC Davis*	2025
Best Presentation Award, *ASA Nonparametric Statistics Section*	2024
Student Paper Award Finalist, *ASA Nonparametric Statistics Section*	2024
Travel Award, *Princeton Machine Learning Theory Summer Schoo*l	2023
Julius Blum Award, *Department of Statistics, UC Davis*	2022
Excellent Tutoring Award, *Seoul National University*	2020
Dean's List, *College of Natural Science, Seoul National University*	2020
3rd Prize, *Poster presentation, Fall Korean Statistical Society Conference*	2019

Teaching Experience

University of California, Davis
Associate Instructor

- STA103: Applied Statistics for Business and Economics (Summer 2025)
(Overall Rating: 4.75/5.0)

Teaching Assistant

- STA010: Statistical Thinking (Fall 2021, Spring 2022)
- STA142A: Statistical Learning I (Winter 2022)
- STA141B: Data & Web Technologies for Data Analysis (Fall 2022)
- STA206: Statistical Methods for Research I (Fall 2022)
- STA100: Applied Statistics for Biological Science (Winter 2023)
- STA013: Elementary Statistics (Spring 2023, Spring 2026)
- STA103: Applied Statistics for Business and Economics (Spring 2025)

- STA104: Nonparametric Statistics (Fall 2025)
- STA138: Categorical Data Analysis (Winter 2026)

Mentoring

Muqing Cui (now Ph.D. student at UC Davis) 2023 - Present
Project: Fréchet variance process

Service

Referee

Journal of Machine Learning Research (1), Journal of the American Statistical Association (1), Biometrika (2), Harvard Data Science Review (2)

Conference Organization

- Chair, "Functional Data Analysis: Regression, Latent Structure, and Inference" session, Joint Statistical Meetings, Boston, MA. (Aug 2026)

Professional Experience

Capital One, Plano, TX
Data Science Ph.D. Intern Jun 2024 - Aug 2024

- Developed explainable AI (XAI) models to estimate risk of account-level auto loans, ensuring transparency and optimized performance.

Republic of Korea Army, South Korea
Sergeant Feb 2016 - Nov 2017

Software

frechet
Statistical Analysis for Random Objects and Non-Euclidean Data (R package on GitHub).