Rong Wu

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Education

University of California, San Francisco — San Francisco, CA
M.S., Clinical and Epidemiological Research — June 2026
Committee: Aaron Wolfe Scheffler, Duygu Tosun-Turgut, and Jacqueline Torres

New York University — New York, NY
M.S., Biostatistics — May 2022
Advisor: Hai Shu, Thesis: Sparse Generalized Nonlinear CCA

Zhejiang University — Hangzhou, China
B.S., Applied Biological Science — June 2020

Research Interests

Bayesian modeling, Machine learning algorithms, Multimodal data integration

Research Experience

UCSF Memory and Aging Center - Multitudes Project — Oct 2025 - Present
Graduate Student Researcher, Manager: Francesca Pei and Julian M. Siebert

- Improving a predictive framework for identifying at-risk bilingual students by implementing penalized logistic regression with cross-validation and bootstrap evaluation.

UCSF Department of Epidemiology & Biostatistics — Aug 2024 - Present
Graduate Student, Advisor: Aaron W. Scheffler

Topic: Bayesian constrained covariate-dependent smoothing and curve registration

- Proposed a semi-parametric regression framework for estimating Amyloid Onset Age from longitudinal *Alzheimer's* data, integrating spline basis functions with structured priors to flexibly capture covariate effects while enforcing biologically interpretable constraints.

Topic: Community-aware Bayesian Multi-object Regression

- Developed a Bayesian multi-object regression model which integrates structural and network brain images to identify brain regions jointly associated with speech rate in multimodal imaging data.

NYU School of Global Public Health — Sept 2020 - May 2022
Graduate Student, Advisor: Hai Shu

Topic: Diffusion and State Space Models for Medical Image Segmentation

- Developed a deep learning segmentation framework that integrates classical backbone (SwinUNETR) with modern Diffusion process and State Space Model (SSM) components, achieving robust organ and tumor segmentation across 13 CT datasets.

Topic: Nonlinear Sparse Generalized Canonical Correlation Analysis (NSGCCA)

- Developed three nonlinear sparse generalized CCA frameworks that jointly model sparse nonlinear dependencies and performed variable selection in multi-view high-dimensional cancer biomarker data.

Work Experience

Statsape Co., Ltd. (Medical Technology start-up) — Aug 2022 - May 2024
Biostatistics and ML Algorithm Engineer

- Developed statistical and machine-learning algorithms to advance the adoption of data-driven analysis in clinical research, enabling end-to-end, visual, and modular algorithm development, which from data preprocessing to model deployment, accelerating intelligent, reproducible research in biomedicine, including drug discovery, genomics, and clinical data modeling.

Manuscripts in progress

1. **Wu, R.**, & Scheffler, W.A. Community aware multi-object regression. [Manuscript]
2. **Wu, R.**, Tosun-Turgut, D., & Scheffler, W.A. Bayesian constrained covariate-dependent smoothing

and curve registration with applications to disease progression modeling. [Manuscript]

Publications

1. **Wu, R.**, Chen, Z., Li, G., & Shu, H. (2025). **Nonlinear Sparse Generalized Canonical Correlation Analysis for Multi-view High-dimensional Data.** [*Biometrics* Revision]
2. **Wu, R.**, Chen, Z., Zhong, L., Li, H., & Shu, H. (2025). **Unleashing Diffusion and State Space Models for Medical Image Segmentation.**[*Journal of Imaging Informatics in Medicine* Revision]
3. **Wu, R.**, & Yu, Y. **Enhancing Medical Image Segmentation via Heat Conduction Equation.** [*IEEE ISBI 2026* Submitted]
4. **Wu, R.**, Li, D., & Zhang, C. (2024, May). [Poster] **Semi-supervised Medical Image Segmentation via Query Distribution Consistency.** In *2024 IEEE International Symposium on Biomedical Imaging (ISBI)* (pp. 1-5). IEEE.
5. Kaul, C., Yang, J., Haller, M., Solomon, S., Wang, Y., **Wu, R.**, and others. (2022) **Assessment of risk factors associated with outpatient parenteral antimicrobial therapy complications.** *Antimicrobial Stewardship & Healthcare Epidemiology*, 2(S1), s18-s18.

Teaching

Teaching Assistant

- **Biostatistical Methods I** (Graduate), Fall 2025, UCSF Department of Epidemiology and Biostatistics
- **Biostatistics for Public Health** (Graduate), Spring 2022, NYU School of Global Public Health
- **Regression I** (Graduate), Fall 2021, NYU School of Global Public Health

Biostatistical Consultant

- **power-analysis using demographic and resilience predictors**
  Advisor: Alexis Merdjanoff, Rebecca Betensky, NYU School of Global Public Health, Spring 2022
- **Statistical analyses for an OPAT clinical study**
  Advisor: Christina Kaul, Rebecca Betensky, NYU School of Global Public Health, Fall 2021

Skills

Programming & Tools	Python, R, MATLAB, Git, GitHub, LaTeX
Machine Learning	Diffusion Models, State Space Models, Zero-shot and Open-vocabulary Segmentation
Statistical Modeling	Bayesian Hierarchical Models, Posterior Sampling, MCMC, Functional Data Analysis, Spline Basis Expansion, Covariate Adjustment in Longitudinal and Multi-view Data

Professional Memberships

2024 - present Student Member, Institute of Electrical and Electronics Engineers (IEEE)
2025 - present Student Member, American Statistical Association