Jinyu Wang

Biostatistician, Brown University School of Public Health, Providence, USA
jinyu_wang@brown.edu ✉ — +1 (401) 443-0819 ☎— https://jinyuwang123.github.io/ 🌐

EDUCATION

Brown University, Providence, USA   2022 — 2024
Master of Science in Data Science

Southern University of Science and Technology[1], Shenzhen, CHN   2018 — 2022
Bachelor of Science in Statistics

PUBLICATIONS & PREPRINTS

Published

- Meng, K., **Wang, J.**, Crawford, L., & Eloyan, A. (2024). Randomness of Shapes and Statistical Inference on Shapes via the Smooth Euler Characteristic Transform[2]. *Journal of the American Statistical Association*, 1–25. https://doi.org/10.1080/01621459.2024.2353947 %
- De Souza, A. L., Mega, A. E., Douglass, J., Olszewski, A. J., Gamsiz Uzun, E. D., Uzun, A., Chou, C., Duan, F., **Wang, J.**, Ali, A., Golijanin, D. J., Holder, S. L., Lagos, G. G., Safran, H., El-Deiry, W. S., & Carneiro, B. A. (2023). Clinical features of patients with *MTAP*-deleted bladder cancer. *American journal of cancer research*, *13*(1), 326–339. %

In-Progress

- Feng, R., **Wang, J.**, Neuman, M., & Duan, F. (2024). Identifiability of time-varying treatment effects and redesign of stepped-wedge cluster randomized trials. Submitted to Statistics in Medicine.
- **Wang, J.**, Meng, K., & Duan, F. (2023). Hypothesis testing for medical imaging analysis via the smooth Euler characteristic transform. arXiv: 2308.06645. %
- Meng, K., Ji, M., **Wang, J.**, Ding, K., Kirveslahti, H., Eloyan, A., & Crawford, L. (2023). Statistical inference on grayscale images via the Euler-Radon transform. arXiv:2308.14249. %

ACADEMIC EXPERIENCE

Brown University   Providence, USA
Biostatistician   Jun 2024 —   Present
Research Assistant   Jan 2023 — May 2024

Southern University of Science and Technology   Shenzhen, CHN
Research Assistant   Jun 2021 — Jun 2022
Teaching Assistant: MA212: Probability Theory and Mathematical Statistics   Feb 2021 — Jun 2021

RESEARCH EXPERIENCE

Stepped-Wedge Cluster Randomized Trial Design   Brown University
Advisor: Rui Feng, Fenghai Duan   Mar 2024 —   Present

- Proposed the identifiability conditions for time and time-dependent treatment effects and suggested alternative designs to allow for parameter estimates in saturated 2-arm and 3-arm models.

Validation of Risk Prediction Models for Nodule Discrimination in Lung Cancer   Brown University
Advisor: Fenghai Duan   Nov 2023 —   Present

- Validated established clinical risk prediction models using DECAMP data, such as Mayo Clinic model.
- Conducted comprehensive analyses to assess the diagnostic performance of integrated models combining clinical, imaging, and molecular markers, and prepared a manuscript for submission (by the end of 2024).

---

[1] Southern University of Science and Technology is abbreviated as SUSTech.
[2] Smooth Euler Characteristic Transform is abbreviated as SECT.

Randomness of Shapes & Statistical Inference on Shapes via SECT ☍ Brown University
Advisor: Kun Meng Sep 2022 — May 2024

- Performed simulation studies to evaluate the effectiveness of SECT-based algorithms.
- Utilized SECT-based algorithms for the analysis of the MPEG-7 shape silhouette dataset (2D images) and the mandibular molar dataset sourced from primates (3D images).

Hypothesis testing for medical imaging via SECT ☍ Brown University
Advisor: Kun Meng, Fenghai Duan Jan 2023 — Present

- Introduced a smooth Euler characteristic transform-based randomization style null hypothesis test to distinguish different collections of shapes and applied it to distinguish between benign and malignant lung tumors.

Statistical Inference of Grayscale Images via the Euler-Radon Transform ☍ Brown University
Advisor: Kun Meng Jan 2023 — Present

- Performed simulation studies on the performance of Euler-Radon Transform-based algorithms and Smooth Euler-Radon Transform-based algorithms.

Patient-Reported Financial Burden of Treatment for Colon or Rectal Cancer ☍ Brown University
Advisor: Fenghai Duan May 2023 — Jul 2023

- Utilized multiple imputation methods to handle missing values within the EAQ162CD dataset and subsequently conducted sensitivity analyses.

FDG-PET/CT Analysis in RTOG1106/ACRIN6697 ☍ Brown University
Advisor: Fenghai Duan Jan 2023 — May 2023

- Utilized the multiple Cox proportional hazards models to assess the prognostic value of using FDG PET/CT to associate with the time to local-regional progression.

Clinical features of patients with MTAP-deleted bladder cancer ☍ Brown University
Advisor: Fenghai Duan Nov 2022 — Jan 2023

- Conducted a propensity score matching analysis to assess and compare survival outcomes among MTAP-WT patients and MTAP-del patients.

Gait Analysis in Dementia and Parkinson's Disease Patients SUSTech
Advisor: Jianqing Shi Jun 2021 — Jun 2022

- Identified the optimal spatiotemporal gait characteristics and machine learning models to classify Parkinson's Disease and Dementia.
- Investigated the effect of novel signal based gait characteristics on performance of machine learning models to classify Parkinson's Disease and Dementia and mapping them into meaningful domains.

Multivariate Zero-Inflated Poisson Model for Correlated Count Data ☍ SUSTech
Advisor: Guoliang Tian Jun 2019 — Oct 2020

- Conducted simulation studies on the performance of the multivariate component Zero-inflated Poisson model.
- Analyzed the Australian Health Care Utilization data set using multivariate Zero-inflated Poisson distributions.

AWARDS & ASSISTANTSHIP

Research Assistantship	Brown University, 2023
Outstanding Graduate Award	SUSTech, 2022
Research Assistantship	SUSTech, 2021
Scholarship for Academic Excellence	SUSTech, 2021
3rd Team Prize(49K teams)	CUMCM, 2020

SOFTWARE

Advanced: R, Python, SAS, Matlab, LaTeX
Intermediate: PASS, SPSS