Jinyu Wang

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EDUCATION

Brown University **2022 - 2024**
Sc.M. Data Science *Providence, USA*

Southern University of Science and Technology **2018 - 2022**
B.S. Statistics (Honors) *Shenzhen, CHN*

PUBLICATIONS & PREPRINTS

PUBLICATIONS

- K. Meng, **J. Wang**, L. Crawford, A. Eloyan. (2024) Randomness of Shapes and Statistical Inference on Shapes via the Smooth Euler Characteristic Transform. *Journal of the American Statistical Association (T&M)*. Link
- A. De Souza, A. Mega, J. Douglass, A. Olszewski, E. Gamsiz Uzun, A. Uzun, C. Chou, F. Duan, **J. Wang**, A. Ali, D. Golijanin, S. Holder, G. Lagos, H. Safran, W. El-Deiry, B. Carneiro. (2023) Clinical features of patients with MTAP-deleted bladder cancer. *American Journal of Cancer Research.* PMID: 36777505. Link

PREPRINTS

- **J. Wang**, K. Meng, F. Duan. (2023) Hypothesis testing for medical imaging via the smooth Euler characteristic transform. arXiv: 2308.06645. Link
- K. Meng, M. Ji, **J. Wang**, K. Ding, H. Kirveslahti, A. Eloyan, L. Crawford. (2023) Statistical Inference of Grayscale Images via the Euler-Radon Transform. Submitted to the *Journal of Applied and Computational Topology*. arXiv:2308.14249. Link

RESEARCH EXPERIENCE

Identifiability of Time-dependent Treatment Effects and Redesign of Stepped-Wedge Cluster Randomized Trial **Mar 2024 - Present**
Advisor: Rui Feng, Fenghai Duan *Brown University*

- 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.

Randomness of Shapes and Statistical Inference on Shapes via the Smooth Euler Characteristic Transform **Sep 2022 - May 2024**
Advisor: Kun Meng *Brown University*

- 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 the smooth Euler characteristic transform **Jan 2023 - Present**
Advisor: Kun Meng, Fenghai Duan *Brown University*

- Introduced a smooth Euler characteristic transform-based randomization style null hypothesis test to distinguish different collections of shapes.

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

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

Longitudinal Assessment of Financial Burden in Patients with Colon or Rectal Cancer Treated with Curative Intent: ECOG-ACRIN EAQ162CD **May 2023 - Jul 2023**
Advisor: Fenghai Duan *Brown University*

- Utilized multiple imputation methods to handle missing values within the EAQ162CD dataset.

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

- 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 **Nov 2022 - Jan 2023**
Advisor: Fenghai Duan *Brown University*

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

Gait Analysis for patients with Dementia and patients with Parkinson's Disease **Jun 2021 – Jun 2022**
Advisor: Jianqing Shi *Southern University of Science and Technology*

- 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.

Correlated count data analysis with multivariate component zero-inflated Poisson model **Jun 2019 – Oct 2020**
Advisor: Guoliang Tian *Southern University of Science and Technology*

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

WORK EXPERIENCE

Biostatistician **Jun 2024 – Present**
(Full time) *Brown University*

Research Assistant **Jan 2023 – May 2024**
Advisor: Fenghai Duan *Brown University*

Research Assistant **Jun 2021 – Jun 2022**
Advisor: Jianqing Shi *Southern University of Science and Technology*

Teaching Assistant **Feb 2021 – Jun 2021**
MA212: Probability Theory and Mathematical Statistics *Southern University of Science and Technology*

HONORS & AWARDS

- Scholarship Recipient for Academic Excellence (2021)
- 3rd Team Prize(49K teams, 148K students): Contemporary Undergraduate Mathematical Contest in Modeling (2020)