Yian Yu

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Experience

University of Michigan   Michigan, USA
Postdoctoral Researcher, Department of Statistics   Beginning Aug. 2025
Supervisor: Prof. Yang Chen, Department of Statistics, University of Michigan, Ann Arbor

Education

Southern University of Science and Technology (SUSTech)   Shenzhen, China
Ph.D. in Mathematics, Department of Statistics and Data Science   Sept. 2020 – June 2025
Supervisor: Prof. Jian Qing Shi, Department of Statistics and Data Science, SUSTech, Shenzhen, China & National Center for Applied Mathematics, Shenzhen, China

SUSTech   Shenzhen, China
B.S. in Statistics, Department of Statistics and Data Science   Sept. 2016 – June 2020
GPA: 3.74/4.00

University of Oxford   Oxford, UK
Summary program at St. Antony's College   July-Aug. 2019

Scholarships and Awards

- National Scholarship for Graduate Students, China, 2022. (2%)
- First Prize (Highest Award), 7th National Academic Forum for Doctoral Students in Statistics, China, 2023.
- Top 10 Outstanding Graduate Student, College of Science, SUSTech, 2025. (3%)
- Outstanding Graduating Graduate Student Award, SUSTech, 2025.
- Outstanding Graduate Student Award, SUSTech, 2024.
- Top 10 Outstanding Undergraduate Graduate Award, Department of Statistics and Data Science, SUSTech, 2020.
- Outstanding Undergraduate Thesis Award, SUSTech, 2020. (2%)
- Second Prize, ASC Student Supercomputer Challenge, worldwide, 2018. (Rank 28/300)
- Honorable Mention, Mathematical Contest in Modeling, worldwide, 2018. (24%)
- Second Prize, 14th May Day Mathematical Contest in Modeling, China, 2017.
- First-Class Scholarship for Outstanding Undergraduate Students, SUSTech, 2017. (5%)
- Second-Class Scholarship for Outstanding Undergraduate Students, SUSTech, 2018. (10%)
- National Encouragement Scholarship for Outstanding Undergraduate Students, China, 2019.
- Outstanding Graduate Award, Zhixin College, SUSTech, 2020 (10%)
- Outstanding Student Leader Award, Zhixin College, SUSTech, 2017 and 2018.

Research

Space Weather Modeling   Michigan, USA
Supervisor: Prof. Yang Chen   Aug. 2025 – now

- Operational implementation of real-time SEP forecasting.
- Applied efficient statistical and machine learning methods for multimodal large-scale spatio-temporal solar data.

Functional Data Analysis   Shenzhen, China
Supervisor: Prof. Jian Qing Shi   Sept. 2020 – July 2025
- Bayesian regression analysis for dependent data with shape constraints.
- Leveraged a continuous time hidden Markov model for functional data with altered covariance structures.
- Applied on free-living signal data acquired through wearable accelerometers.

Multiple Testing   Shenzhen, China
Supervisor: Prof. Siu Hung Cheung, Department of Statistics, The Chinese Univer-   Jan. 2020 – July 2022
sity of Hong Kong, Hong Kong, China
- Proposed a modified latent Weibull model, and compared treatments with ordinal responses in trials with sequential monitoring and response-adaptive randomization.

Structual Data Analysis   Shenzhen, China
Supervisor: Prof. Jian Qing Shi. And Prof. Yi Guo, Department of Neurology, Shen-   Mar. 2022 – Aug. 2023
zhen People's Hospital & Institute of Neurological Diseases, Shenzhen Bay Labora-
tory, Shenzhen, Guangdong, China
- Processed questionnaire data, implement statistical tests, confirmatory factor analysis, and logistic regression analysis. Demonstrated the new questionnaire possesses good reliability and validity, outperforming the commonly used scales in terms of screening accuracy.

Programming Skills

Proficient in R. Familiar with Python, MATLAB, and C++.

Publications

(† denotes equal contribution, * denotes corresponding author)

- **Yian Yu**, Yang Chen*, Lulu Zhao, Kathryn Whitman, Ward Manchester, and Tamas Gombosi. (2025) Solar energetic particle forecasting with multi-task deep learning: SEPNET. arXiv preprint arXiv: 2512.12786. (Preparing for submition)

- **Yian Yu**, Bo Wang, and Jian Qing Shi*. (2025). Analyzing functional data with a mixture of covariance structures using a curve-based sampling scheme. arXiv preprint arXiv:2504.01313. (Under review).

- **Yian Yu**, Long Tang, Kang Ren, Zhonglue Chen, Shengdi Chen, and Jian Qing Shi*. (2024). Bayesian regression analysis for dependent data with an elliptical shape. *Entropy* 26(12), 1072. (The manuscript was awarded the highest prize at the 7th National Academic Forum for Doctoral Students in Statistics)

- **Yian Yu**, Cong Xu*, Junjiang Zhong, and Siu Hung Cheung. (2022). Comparison of treatments with ordinal responses in trials with sequential monitoring and response-adaptive randomization. *Statistics in Medicine*, 41(25), 5061-5083.

- Silin Zeng†, **Yian Yu**†, Jian Qing Shi*, Qingshan Geng*, Rafael H Llinas*, Yi Guo*, et al. (2023). Neuro-11: A new questionnaire for the assessment of somatic symptom disorder in general hospitals. *General Psychiatry*, 36(4). (BMJ Connections journal).

- Jian Qing Shi, Yutian Zeng, **Yian Yu**, Guanpeng Li, Yingshan Qiu, Jinyu Wang, Huijie Jiang, and Ziyang Ren. (2022). Gait analysis and neurodegenerative disease classification system software. China, 2022SR1591079[CP]. (Application Serial No. 2022R11L2175851, Software Copyright Registration Certificate No. 10545278)

- Jian Qing Shi, Siqi Yan, **Yian Yu**, Beini Liu, Xiaorui Wang, Lin Tang, and Wenjing Zhao. (2025). Neurodegenerative Disease Analysis Method, Device, and Terminal Based on Multimodal Data. China. (Invention Patent Application No. 2025106436652, Current Status: Accepted, pending authorization)

Technical Reports

- **Yian Yu**, Bo Wang*, and Jian Qing Shi* (2025). Bayesian Latent Factor Models for High-dimensional Functional Data with Varying Covariance Structures. (Under review)
- **Yian Yu**†, Lin Tang†, Jian Qing Shi, Wenjing Zhao*, et al. (2025). Dementia and Parkinson's disease detection using free-living gait data. (Under review)

Talks & Posters

- "Prediction Models for Geomagnetic Activity Using Tomorrow's Solar Wind". Poster at 2025 Advancing Earth and Space Science (AGU).
- "Analyzing Functional Data with a Mixture of Covariance Structure Using a Curve-Based Sampling Scheme". Talk at the 2025 Academic Annual Conference of the Multivariate Analysis Application Committee of China Field Statistics Research Association, June 2025, Chongqing, China.
- "Bayesian Regression Analysis for Elliptical Dependent Variables". Talk at the 2nd Joint Conference on Statistics and Data Science, July 2024, Kunming, China.
- "Bayesian Curve Fitting and Prediction with Ellipsoid-Gaussian Distribution". Talk at the 7th National Academic Forum, Oct. 2023, Guangzhou, China.

Teaching Assistantships

Functional Data Analysis (University faculties), Yunnan University	Summer 2023
China mathematics Yuan fund summer school for statistics teachers in western universities.	
Probability and Statistics (Undergraduate), SUSTech	Spring 2022
Time Series Analysis (Undergraduate), SUSTech	Fall 2022
Sample Surveys (Undergraduate), SUSTech	Spring 2021
Statistical Linear Models (Undergraduate), SUSTech	Fall 2021