Yian Yu

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Education

Southern University of Science and Technology (SUSTech) — Shenzhen, China
Ph.D. Candidate in Mathematics, Department of Statistics and Data Science — Sept. 2020 – Present (Expected 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.
- Outstanding Graduate Student Award, SUSTech, 2024.
- Top 10 Outstanding 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 Interests

Functional Data Analysis — Shenzhen, China
Supervisor: Prof. Jian Qing Shi — Sept. 2020 – Present
- 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 University of Hong Kong, Hong Kong, China — Jan. 2020 – July 2022
- 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, Shenzhen People's Hospital & Institute of Neurological Diseases, Shenzhen Bay Laboratory, Shenzhen, Guangdong, China — Mar. 2022 – Aug. 2023
- Processed questionnaire data, implement statistical tests, confirmatory factor analysis, and logistic regres-

sion 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)

- **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. (Submitted to *Journal of the American Statistical Association*).
- **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)
- Jian Qing Shi, Yutian Zeng, **Yian Yu**, et al. (2022). Gait analysis and neurodegenerative disease classification system software. China, 2022SR1591079[CP]. (Application Serial No. 2022R11L2175851, Software Copyright Registration Certificate No. 10545278)
- **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 subsidiary journal).

Technical Reports

- **Yian Yu** and Jian Qing Shi. Bayesian latent factor model for multivariate functional data with mixed covariance structures.
- **Yian Yu**[†], Lin Tang[†], Jian Qing Shi, et al. The early stage of the study in dementia and Parkinson's disease using gait features based on accelerometer free-living signals.

Talks

- "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