

## Curriculum Vitae



### **Dr Fan Zengyan**

Deputy Head, Mathematics Programme and Head, Minor in  
Data Science Programme  
School of Science and Technology

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### **Education Qualifications**

2017                      PhD (Statistics), Nanyang Technological University

### **Academic and Professional Experience**

2020 – Present      Lecturer, School of Science & Technology, SUSS

2017 – 2019        Research Fellow, Department of Statistics and Applied Probability, NUS

### **Memberships and Professional Activities**

2023 – Present      Reviewer for the Journal of the American Statistical Association

2020 – Present      Reviewer for Journal of Machine Learning Research

2019 – Present      Reviewer for International Journal of Machine Learning and Cybernetics

### **Research Interests**

- High dimensional statistical problems
- Functional data analysis
- Non-Euclidean data analysis
- Network data analysis

### **Selected Publications**

Y. Wang, H. Lin, Z. Fan, and H. Lian. (2024). Locally adaptive sparse additive quantile regression model with TV penalty. *Journal of Statistical Planning and Inference*, 106144.

Z. Yao, Y. Xia and Z. Fan. (2023). Random Fixed Boundary Flows. *Journal of the American Statistical Association*, (just-accepted), 1-22.

S. S. Salamat, F. Liu, Z. Fan and W. Zhang. (2023). It Is About Weather: Explainable Machine Learning for

- Traffic Accident Understanding, IEEE Conference on Systems, Man, and Cybernetics (SMC). In Press. IEEE. Hawaii, USA.
- Y. Tian, H. Lin, H. Lian and Z. Fan. (2021). Additive functional regression in reproducing kernel Hilbert spaces under smoothness condition. *Metrika*, 84, 429-442.
- S. Lv, Z. Fan, H. Lian, T. Suzuki and K. Fukumizu. (2020). A reproducing kernel Hilbert space approach to high dimensional partially varying coefficient model. *Computational Statistics & Data Analysis*, 152, 107039.
- Z. Yao, Z. Fan, M. Hayashi and W. F. Eddy. (2020) Quantifying time-varying sources in Magnetoencephalography – a discrete approach. *Annals of Applied Statistics*. 14 (3) 1379 – 1408.
- H. Lian, Z. Fan. (2018) Divide-and-conquer for debiased l1-norm support vector machine in ultra-high dimensions. *The Journal of Machine Learning Research*. 18 (1), 6691-6716.
- Z. Fan and H. Lian. (2018) Quantile regression for additive coefficient models in high dimensions. *Journal of Multivariate Analysis*. 164, 54-64.
- Z. Fan and H. Lian. (2017) Interquantile shrinkage in additive models. *Journal of Nonparametric Statistics*. 29 (3), 561-576.
- H. Lian and Z. Fan. (2016) Minimax convergence rates for kernel CCA. *Journal of Multivariate Analysis*. 150, 183-190.
- H. Lian, J. Meng and Z. Fan. (2015) Simultaneous estimation of linear conditional quantiles with penalized splines. *Journal of Multivariate Analysis*. 141, 1-21.
- H. Lian and Z. Fan. (2015) Estimation of a sparse and spiked covariance matrix. *Journal of Nonparametric Statistics*. 27, 241-252.
- L. Zhao and Z. Fan. (2013) The number of small amplitude limit cycles in arbitrary polynomial systems. *Journal of Mathematical Analysis and Applications*. 407 (2), 237-249.

## Software

- GTP: A R version of the GTP algorithm (proposed by Dr. Megan Owens) to compute geodesic distance and paths between phylogenetic trees in polynomial time. The R package is available on GitHub through <https://github.com/FloraZFan/GTP>
- RFBF: A R code to analyze variations locally and globally for complex data on non-linear Riemannian manifolds. The R package is available on Github through <https://github.com/FloraZFan/Random-Fixed-Boundary-Flows>
- Z. Yao, Y. Xia and Z. Fan. (2023). Random Fixed Boundary Flows. *Journal of the American Statistical Association*, (just-accepted), 1-22.