

# Xingchao Jian

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## Education

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**Nankai University**, Tianjin, China

*B.S. in Statistics*

Sep. 2016 - Jun. 2020

School of Mathematical Sciences

**Nanyang Technological University**, Singapore

*Ph.D. candidate*

Aug. 2020 -  
School of Electrical and Electronic Engineering

Supervisor: Prof. Wee Peng Tay (wptay@ntu.edu.sg)

## Other Experiences

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**UC Berkeley**, California, US

*Exchange Student*

Aug. 2018 - Dec. 2018

**Hong Kong University of Science and Technology**, Hong Kong SAR

*Summer Research Internship*

Jul. 2019 - Aug. 2019

Department of Mathematics

Topic: stochastic graph models, network detection algorithms.

## Publications

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### Submitted/Underreview papers

1. F. Ji, **X. Jian**, W. P. Tay and M. Yang “Topological Signal Processing over Simplicial Complexes with Abelian Groups”, submitted to *IEEE Transactions on Signal Processing*, under review.
2. F. Ji, **X. Jian** and W. P. Tay “Modeling Sparse Graph Sequences and Signals Using Generalized Graphons”, submitted to *IEEE Transactions on Signal Processing*, under review.

### Published/Accepted journal papers

1. **X. Jian**, W. P. Tay and Y. C. Eldar, “Kernel Based Reconstruction for Generalized Graph Signal Processing,” in *IEEE Transactions on Signal Processing*, in press.
2. **X. Jian** and W. P. Tay, “Wide-Sense Stationarity in Generalized Graph Signal Processing,” in *IEEE Transactions on Signal Processing*, vol. 70, pp. 3414-3428, 2022.

### Refereed conference Proceedings

1. P. Zhang, **X. Jian**, F. Ji, W. P. Tay and B. Wen, ”Spectral Convergence of Simplicial Complex Signals ,” in *Proc. IEEE International Symposium on Information Theory*, Athens, Greece, Jul. 2024.
2. S. Wang, R. She, Q. Kang, **X. Jian**, K. Zhao, Y. Song, and W. P. Tay, “DistilVPR: Cross-Modal knowledge distillation for visual place recognition,” in *Proc. AAAI Conference on Artificial Intelligence*, Vancouver, Canada, Feb. 2024.
3. R. She, S. Wang, Q. Kang, K. Zhao, Y. Song, W. P. Tay, T. Geng, **X. Jian**, ”PosDiffNet: Positional Neural Diffusion for Point Cloud Registration in a Large Field of View with Perturbations,” in *Proc. AAAI Conference on Artificial Intelligence*, Vancouver, Canada, Feb. 2024.
4. **X. Jian** and W. P. Tay, ”Kernel Ridge Regression for Generalized Graph Signal Processing,” in *Proc. IEEE International Conference Acoustics, Speech, and Signal Processing*, Rhodes Island, Greece, 2023.
5. **X. Jian** and W. P. Tay, ”Wide-Sense Stationarity and Spectral Estimation for Generalized Graph Signal,” in *Proc. IEEE International Conference Acoustics, Speech, and Signal Processing*, Singapore, May. 2022.

### Books and Chapters

1. **X. Jian**, F. Ji and W. P. Tay (2023), “Generalizing Graph Signal Processing: High Dimensional Spaces, Models and Structures”, *Foundations and Trends<sup>®</sup> in Signal Processing*: Vol. 17: No. 3, pp 209-290.

## Teaching

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### Teaching Assistant

- IE3002 (Microprocessor): NTU, 2022-2023 Sem 1
- IE2010/2110 (Signals and Systems): NTU, 2022-2023 Sem 1, 2; 2023-2024 Sem 1
- IE0005 (Introduction to Data Science and Artificial Intelligence): NTU, 2022-2023 Sem 2

## Skills

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- **Programming:** R, MATLAB, Python.
- **Communication:** Mandarin, English.