Xingchao Jian

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Education

Nankai University, Tianjin, China — Sep. 2016 - Jun. 2020
B.S. in Statistics — School of Mathematical Sciences

Nanyang Technological University, Singapore — Aug. 2020 - Jan. 2025
Ph.D. — School of Electrical and Electronic Engineering
Supervisor: Prof. Wee Peng Tay (wptay@ntu.edu.sg)

Work Experience

Nanyang Technological University, Singapore — Aug. 2020 - Feb. 2025
Research Engineer — School of Electrical and Electronic Engineering

Technical University of Munich, Munich, Germany — May. 2025 -
Postdoctoral Research Fellow — School of Computation, Information and Technology
Supervisor: Prof. Felix Krahmer

Awards and Honors

EEE Best Thesis Award — 2025
School of Electrical and Electronic Engineering, Nanyang Technological University. In recognition of students with significant research achievements.

Other Experiences

UC Berkeley, California, US — Aug. 2018 - Dec. 2018
Exchange Student

Hong Kong University of Science and Technology, Hong Kong SAR — Jul. 2019 - Aug. 2019
Summer Research Internship — Department of Mathematics
Topic: stochastic graph models, network detection algorithms.

Publications

Published/Accepted Journal Papers

1. W. Luo, Y. H. Lee, **X. Jian**, T. Hao "A New Method for GPR Clutter Suppression Based on Stationary Graph Signals Processing", *IEEE Transactions on Geoscience and Remote Sensing*, vol. 63, pp. 1-12, 2025.
2. F. Ji, **X. Jian** and W. P. Tay "Modeling Sparse Graph Sequences and Signals Using Generalized Graphons", *IEEE Transactions on Signal Processing*, vol. 72, pp. 5048-5064, 2024.
3. **X. Jian**, W. P. Tay and Y. C. Eldar, "Kernel Based Reconstruction for Generalized Graph Signal Processing," in *IEEE Transactions on Signal Processing*, vol. 72, pp. 2308-2322, 2024.
4. **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. **X. Jian**, M. Gölz, F. Ji, W. P. Tay, A. M. Zoubir, "A Generalized Graph Signal Processing Framework for Multiple Hypothesis Testing over Networks," in *Proc. IEEE International Conference Acoustics, Speech, and Signal Processing*, Hyderabad, India, Apr. 2025.
2. Y. Zhao, **X. Jian**, F. Ji, W. P. Tay, A. Ortega, "Generalized Graph Signal Reconstruction via the Uncertainty Principle," in *Proc. IEEE International Conference Acoustics, Speech, and Signal Processing*, India, Apr. 2025.
3. 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.
4. 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.
5. 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.
6. **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.
7. **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.

Preprints

1. **X. Jian**, M. Gölz, F. Ji, W. P. Tay and A. M. Zoubir, "A Generalized Graph Signal Processing Framework for Multiple Hypothesis Testing over Networks," *arXiv preprint arXiv:2408.03142*, 2024.

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® in Signal Processing*: Vol. 17: No. 3, pp 209-290.

Teaching

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

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