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. F. Ji, **X. Jian**, W. P. Tay, M. Yang, "Processing Asynchronous Time-simplex Signals," in *Proc. European Signal Processing Conference*, Isola delle Femmine, Palermo, Italy, Sep. 2025.
2. **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.
3. 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.
4. 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.
5. 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.
6. 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.
7. **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.
8. **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.