Curriculum Vitae

Zetao FEI

Postdoctoral Fellow, École Polytechnique

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Education

September 2015— *June 2019*	**B.S in Mathematics** Wuhan University, Wuhan, Hubei Province, China
September 2019— *August 2021*	**M.Phil in Mathematics** The Hong Kong University of Science and Technology, Hong Kong SAR Supervisor: Prof. Hai Zhang.
September 2021— *August 2024*	**Ph.D. in Mathematics** The Hong Kong University of Science and Technology, Hong Kong SAR Supervisor: Prof. Hai Zhang.

Academic Experience

October 2024— *Now*	**Postdoctoral Fellow** CMAP, École Polytechnique, Palaiseau, France Supervisor: Prof. Josselin Garnier.

Research Interest

- Applied Mathematics, Inverse Problems and Imaging, Signal Processing, Wave Physics.

Publications

- Zetao Fei and Hai Zhang. "SCAN-MUSIC: An efficient super-resolution algorithm for large-scale single snapshot line spectral estimation". In: *Numerical Algorithms* (2025). ISSN: 1572-9265. DOI: 10.1007/s11075-025-02079-9. URL: https://doi.org/10.1007/s11075-025-02079-9
- Zetao Fei and Hai Zhang. "IFF: A Superresolution Algorithm for Multiple Measurements". In: *SIAM Journal on Imaging Sciences* 16.4 (2023), pp. 2175–2201
- Zetao Fei, Hai Zhang, "Towards a Theory of Stable Super-Resolution: Model-Based Formulation and Stability Analysis", preprint
- Xinyu Liu*, Zetao Fei*, Ka Hei Ho*, Chun Pu Wu*, Hai Zhang, Hyokeun Park, "Multiple Particles Tracker via Velocity Filtering (MPT-vVF) for Tracking Organelles". In preparation.

- Zetao Fei, Josselin Garnier, "Passive Imaging Under Wave Speed Mismatch: Mathematical Analysis and Background Velocity Estimation". In preparation.
- Zetao Fei, Josselin Garnier, Laure Giovangigli, and Pierre Millien, "Effective wavespeed estimation for quantitative ultrasound imaging". In preparation.

Awards

- HKUST RedBird Academic Excellence Award for Continuing PhD Students, 2023-24.
- HKUST RedBird Academic Excellence Award for Continuing PhD Students, 2022-23.
- Best TA Award for Din-Yu Hsieh Teaching Awards, Department of Mathematics, HKUST, 2021-22.
- Best TA Award for Din-Yu Hsieh Teaching Awards, Department of Mathematics, HKUST, 2019-20.

Invited Talks

- MS03: Wave Propagation in Novel Materials and its Application in Inverse Problems and Imaging, HKSIAM, Hong Kong, 7-11 July 2025.
- Conference on Mathematics of Wave Phenomena, Karlsruhe, Germany, 24-28 Feb. 2025.
- East Asia Section of Inverse Problems International Association (IPIA) - 7th Young Scholar Symposium, The Hong Kong University of Science and Technology, 9-10 Dec. 2023.
- Seminar on Inverse Problem Modeling, Theory and Computation, Guangzhou, 11-13 Nov. 2023.
- MS19: Theory and algorithms of super-resolution in imaging and inverse problems, Applied Inverse Problems, Gottingen, Germany, 4-8 Sept. 2023.
- The 6th East Asia Section of IPIA - Young Scholars Symposium, The Chinese University of Hong Kong, 25-26 Mar. 2023.
- Hong Kong Workshop on Inverse Problems and Imaging, IAS, HKUST, Hong Kong, Nov. 2022.

Academic Service

- Vice-president of HKUST SIAM Student Chapter, 2023-2025.
- Referee for "IEEE Transactions on Multimedia"

Teaching Experience

- Teaching Assistant of Multivariable Calculus, HKUST, Spring 2020.
- Teaching Assistant of Real Analysis, HKUST, Fall 2020 & Spring 2021.
- Teaching Assistant of Calculus and Linear Algebra, HKUST, Fall 2021.

- Teaching Assistant of Complex Analysis, HKUST, Spring 2022.
- Teaching Assistant of Functional Analysis, HKUST, Fall 2022.
- Teaching Assistant of Calculus II, HKUST, Spring 2023.
- Teaching Assistant of Mathematical Analysis, HKUST, Fall 2023.

Language

- Chinese, English.

Coding Language

- MATLAB, Python.