

RUIMING GUO

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Imperial College London
London, UK

RESEARCH INTERESTS

- Computational imaging, ToF Imaging, modulo sampling, sampling theory, image restoration, super-resolution.
- Signal understanding, Data interpretation and visualization, multi-dimensional geometry retrieval from 1D data.

EDUCATION

Ph.D. in Electronic Engineering, The Chinese University of Hong Kong, July 2021

- Supervisor: Prof. Thierry Blu
- GPA: 3.93/4.00

B.S. in Electronic and Information Engineering, Sichuan University, June 2017

- Supervisor: Prof. Xiaohai He
- Overall Ranking: 1/139

RESEARCH EMPLOYMENT

Research Fellow

Mentor: Prof. Thierry Blu,

Research Associate

Mwntor: Prof. Ayush Bhandari

The Chinese University of Hong Kong

Aug 2021 – Aug 2022

Imperial College London

Aug 2022 - present

PUBLICATIONS

- **JOURNAL PAPERS** (* denotes co-first author, ^ denotes correspondence author)
 - [1]. **R. Guo**[^] and T. Blu, "FRI Sensing: Retrieving the trajectory of a mobile sensor from its temporal samples", *IEEE Trans. Signal Process.*, vol. 68, pp. 5533-5545, 2020.
 - [2]. **R. Guo**[^] and T. Blu, "Exploring the Geometry of One-Dimensional Signals", *IEEE Trans. Signal Process.*, vol. 69, pp. 5299-5312, 2021.
 - [3]. Y. Li, **R. Guo**, H. Zhao and T. Blu, "Generic FRI-based DOA Estimation: A Model-Fitting Method", *IEEE Trans. Signal Process.*, vol. 69, pp. 4102-4115, 2021.
 - [4]. **R. Guo**[^], Y. Li, T. Blu and H. Zhao, "Vector-FRI Recovery of Multi-Sensor Measurements", *IEEE Trans. Signal Process.*, vol.70, pp. 4369-4380, 2022.
 - [5]. Y. Li*, **R. Guo***, H. Zhao and T. Blu, "Robust sparse reconstruction of attenuated acoustic field with unknown range of source", *The Journal of the Acoustical Society of America*, vol.152, issue 6, 2022.
 - [6]. **R. Guo** and T. Blu, "Super-Resolving a Frequency Band", *IEEE Trans. Signal Magazine.*, vol.40, pp. 73-77, 2023.

- [7]. **R. Guo**, Y. Zhu and A. Bhandari, "Sub-Nyquist USF Spectral Estimation: K Frequencies with 6K+4 Modulo Samples", *IEEE Trans. Signal Process.*, vol. 72, pp. 5065-5076, 2024.
- [8]. **R. Guo** and A. Bhandari, "Blind Time-of-Flight Imaging: Sparse Deconvolution on the Continuum with Unknown Kernels", *SIAM Journal on Imaging Sciences*, (In production), 2024.

• CONFERENCE PAPERS

- [1]. Y.Zhu, R. Guo, P.Zhang and A.Bhandari, "Frequency Estimation via Sub-Nyquist Unlimited Sampling", 2023 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2024).
- [2]. R. Guo and A.Bhandari, "Unlimited Sampling of FRI Signals Independent of Sampling Rate", 2023 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2023).
- [3]. R. Guo and A.Bhandari, "ITER-SIS: Robust Unlimited Sampling Via Iterative Signal Sieving", 2023 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2023).
- [4]. R. Guo[^] and T. Blu, "FRI Sensing: 2D Localization from 1D Mobile Sensor Data", 2020 Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC'20), Auckland, New Zealand, 2020, pp. 986-991 (APSIPA 2020).
- [5]. R. Guo[^] and T. Blu, "FRI Sensing of Laminar Images", The 55th Asilomar Conference on Signals, Systems and Computers (Asilomar'21).
- [6]. R. Guo[^] and T. Blu, "FRI Imaging of Laminar Images from Its Samples Along an Unknown Trajectory", SIAM Conferences on Imaging Science. (SIAM IM, 2022).
- [7]. R. Guo[^] and T. BLU, "FRI Sensing: Sampling images along unknown curves", 2019 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2019).
- [8]. W. Wang*, R. Guo*, Y. Tian and W. Yang, "CFSNet: Toward a Controllable Feature Space for Image Restoration", International Conference on Computer Vision 2019 (ICCV 2019).

PROFESSIONAL SERVICES

Reviewer for

- ICASSP: IEEE International Conference on Acoustics, Speech and Signal Processing
- TSP: IEEE Trans. Signal Process
- TSP letter: IEEE Trans. Signal Process Letter
- ICCV: IEEE/CVF International Conference on Computer Vision

ADWARDS & HONOURS

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|--|-------------|
| • EE Department's 2021 Postgraduate Student Research Awards | Feb 2022 |
| • CUHK Tutor Commendation, | 2020 - 2021 |
| • Hong Kong Postgraduate Scholarship, | 2017 - 2021 |
| • National Scholarship (Comprehensive Ranking 2/251, top 1%) | Nov.2014 |
| • First Prize in Sichuan Division of the 6 th Chinese Mathematics Competitions(CMC) | Oct.2014 |
| • Award for Outstanding Student of Sichuan University (top 5%) | 2014 & 2015 |
| • First Prize in the Mathematics Competition of Sichuan University (top 2%) | May.2014 |

TEACHING

- ENGG 2420A: Complex Analysis and Differential Equation, Fall 2017-2020
- ENGG 4502: Digital Signal Processing, Spring 2017, 2018
- ENGG 2740A: Differential Equations, Spring 2021