

# Curriculum Vitae and Bibliography

**Jingke Zhang (张经科), PhD**

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## EDUCATION

2017-2022 **Tsinghua University**, Beijing, China

■ Ph.D in Biomedical Engineering

■ Supervisor: Jianwen Luo

■ Thesis Title: A Study on High-speed and High-quality Image Reconstruction Algorithm for High-frame-rate Ultrasound Imaging

2013-2017 **Huazhong University of Science and Technology (HUST)**, Wuhan, China

■ B.S. in Biomedical Engineering

## AWARDS

2022- Outstanding Doctoral Graduates of Tsinghua University (Top 4%), Tsinghua University

2022- Excellent Doctoral Dissertation of Tsinghua University (Top 10%), Tsinghua University

2022- Best Presentation Award of Annual Retreat (Top 10%), CBIR, Tsinghua University

2021- National Scholarship, Ministry of Education of China (Top 0.2%)

2021- Finalist (Top 10), Best Student Paper Award, IEEE International Ultrasonics Symposium (IUS)

2021- Best Presentation Award of Annual Retreat (Top 10%), CBIR, Tsinghua University

2020- Best Presentation Award of Annual Retreat (Top 10%), CBIR, Tsinghua University

2018- Best Presentation Award of Annual Retreat (Top 10%), CBIR, Tsinghua University

2017- Outstanding Graduates of HUST, HUST

2016- National Scholarship, Ministry of Education of China (Top 0.2%)

2015- First Prize, The “Challenge Cup” Extracurricular Academic Science and Technology Works Competition of Hubei Province

2015- First Prize, Innovate FPGA competition, HUST

2015- Outstanding Undergraduates (Top 1%), HUST

## JOURNAL REVIEW SERVICES

IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control

## BIBLIOGRAPHY

### Peer Reviewed Journal Articles

- 1) L. Huang, **J. Zhang**, X. Wei, L. Jing, Q. He, X. Xie, G. Wang and J. Luo\*. Improved ultrafast power Doppler imaging by using spatiotemporal non-local means filtering. *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, 69(5):1610-1624, 2022. DOI: [10.1109/TUFFC.2022.3158611](https://doi.org/10.1109/TUFFC.2022.3158611)
- 2) L. Qiu#, **J. Zhang**#, Y. Yang#, H. Zhang, F. Lee, Q. He, L. Qian\* and J. Luo\*. In vivo Assessment of Hypertensive Nephrosclerosis using Ultrasound Localization Microscopy. *Medical Physics*, 49(4):2295-2308, 2022. DOI: [10.1002/mp.15583](https://doi.org/10.1002/mp.15583)
- 3) **J. Zhang**#, J. Liu#, W. Fan, W. Qiu and J. Luo\*. Partial Hadamard Encoded Synthetic Transmit Aperture for High Frame Rate Imaging with Minimal l2-Norm Least Square Method. *Physics in Medicine and Biology*, 67(10): 105002, 2022. DOI: [10.1088/1361-6560/ac6202](https://doi.org/10.1088/1361-6560/ac6202)
- 4) **J. Zhang**#, Y. Wang#, J. Liu, Q. He, R. Wang, H. Liao and J. Luo\*. Acceleration of Reconstruction for Compressed Sensing based Synthetic Transmit Aperture Imaging by using In-phase/quadrature Data. *Ultrasonics*, 118: 106576, 2022. DOI: [10.1016/j.ultras.2021.106576](https://doi.org/10.1016/j.ultras.2021.106576)
- 5) **J. Zhang**, Q. He, Y. Xiao, H. Zheng, C. Wang\* and J. Luo\*. Ultrasound Image Reconstruction from Plane Wave Radio-frequency Data by Self-Supervised Deep Learning Network. *Medical Image Analysis*, 70(5): 102018, 2021. DOI: [10.1016/j.media.2021.102018](https://doi.org/10.1016/j.media.2021.102018)

## Conference Proceedings

- 1) **J. Zhang**, H. Zhang, Y. Yang, Q. He, L. Qiu, L. Qian and J. Luo\*. In vivo Assessment of Diabetic Kidney Disease using Ultrasound Localization Microscopy. *IEEE International Ultrasonics Symposium*, (Oral) IUS 2021. (**Best Student Paper Award Finalist**) DOI: [10.1109/IUS52206.2021.9593542](https://doi.org/10.1109/IUS52206.2021.9593542)
- 2) **J. Zhang**, Q. He, C. Wang, H. Liao and J. Luo\*. A General Framework for Inverse Problem Solving using Self-Supervised Deep Learning: Validations in Ultrasound and Photoacoustic Image Reconstruction. *IEEE International Ultrasonics Symposium*, (Oral) IUS 2021. DOI: [10.1109/IUS52206.2021.9593902](https://doi.org/10.1109/IUS52206.2021.9593902)
- 3) **J. Zhang**, C. Wang, H. Liao and J. Luo\*. Ultrasound Image Reconstruction by Self-Supervised Deep Neural Network: A Study on Coherent Compounding Strategy. *IEEE International Ultrasonics Symposium*, (Poster) IUS 2021. DOI: [10.1109/IUS52206.2021.9593733](https://doi.org/10.1109/IUS52206.2021.9593733)
- 4) **J. Zhang**, Y. Wang, H. Liao and J. Luo\*. Recovery of Full Synthetic Transmit Aperture Dataset with Well-preserved Phase Information by Self-Supervised Deep Learning. *IEEE International Ultrasonics Symposium*, (Oral) IUS 2021. DOI: [10.1109/IUS52206.2021.9593862](https://doi.org/10.1109/IUS52206.2021.9593862)
- 5) **J. Zhang**, L. Huang, H. Liao and J. Luo\*. Improved Background Noise Suppression in Ultrasound Localization Microscopy using Spatial Coherence Beamforming. *IEEE International Ultrasonics Symposium*, (Poster) IUS 2021. DOI: [10.1109/IUS52206.2021.9593582](https://doi.org/10.1109/IUS52206.2021.9593582)
- 6) **J. Zhang**<sup>#</sup>, J. Liu<sup>#</sup>, Y. Wang, W. Fan, W. Qiu and J. Luo\*. Partial Hadamard Encoded Synthetic Transmit Aperture for High Frame Rate Imaging with Minimal l2-norm Least Square Reconstruction Method. *IEEE International Ultrasonics Symposium*, (Poster) IUS 2021. DOI: [10.1109/IUS52206.2021.9593780](https://doi.org/10.1109/IUS52206.2021.9593780)
- 7) H. Zuo<sup>#</sup>, **J. Zhang**<sup>#</sup>, J. Luo\* and B. Peng\*. Phase Constraint Improves Ultrasound Image Quality Reconstructed using Deep Neural Network. *IEEE International Ultrasonics Symposium*, (Oral) IUS 2021. DOI: [10.1109/IUS52206.2021.9593647](https://doi.org/10.1109/IUS52206.2021.9593647)
- 8) Y. Li<sup>#</sup>, L. Huang<sup>#</sup>, **J. Zhang**<sup>#</sup>, C. Huang, S. Chen and J. Luo\*. Localization of High-concentration Microbubbles for Ultrasound Localization Microscopy by Self-supervised Deep Learning. *IEEE International Ultrasonics Symposium*, (Poster) IUS 2021, DOI: [10.1109/IUS52206.2021.9593750](https://doi.org/10.1109/IUS52206.2021.9593750)
- 9) L. Huang, **J. Zhang**, Y. Hao, L. Jing, Q. He, G. Wang and J. Luo\*. Spatiotemporal Nonlocal Means Based Denoising for Ultrasound Microvascular Imaging. *IEEE International Ultrasonics Symposium*, (Poster) IUS 2021. DOI: [10.1109/IUS52206.2021.9593725](https://doi.org/10.1109/IUS52206.2021.9593725)
- 10) W. Man<sup>#</sup>, L. Huang<sup>#</sup>, **J. Zhang**, J. Jiao, L. Jing, Q. He, Y. Guo and J. Luo\*. Perivascular Space Detection by using Contrast-enhanced Ultrafast Power Doppler Imaging: A Feasibility Study. *IEEE International Ultrasonics Symposium*, (Oral) IUS 2021. DOI: [10.1109/IUS52206.2021.9593600](https://doi.org/10.1109/IUS52206.2021.9593600)
- 11) **J. Zhang**, X. Zhang, Y. Yang, Q. He and J. Luo\*. A Deep Learning Method for Reduction of Microbubble Accumulation Time in Ultrasound Localization Microscopy. *IEEE International Ultrasonics Symposium*, (Poster) IUS 2020. DOI: [10.1109/IUS46767.2020.9251475](https://doi.org/10.1109/IUS46767.2020.9251475)
- 12) **J. Zhang**, Q. He, Y. Xiao, H. Zheng, C. Wang and J. Luo\*. Self-supervised Learning of a Deep Neural Network for Ultrafast Ultrasound Imaging as an Inverse Problem. *IEEE International Ultrasonics Symposium*, (Poster) IUS 2020. DOI: [10.1109/IUS46767.2020.9251533](https://doi.org/10.1109/IUS46767.2020.9251533)