Yuxin Zhang

Ph.D. Candidate

1997-09-24 | LS2N, Centrale Nantes | France | Google Scholar
yuxin.zhang@ls2n.fr | Yuxin-Zhang-Jasmine | digital C.V.

My research interest is in Biomedical Ultrasound imaging. I hold a firm belief in the future of digital healthcare!

Education

2024.11 2021.09	**LS2N, Centrale Nantes, France** Ph.D. Candidate • Medical Ultrasound Image Reconstruction with Deep Learning
2021.06 2019.09	**Centrale Nantes, France** 2^{nd} Year Master • Signal and Image Processing 1^{nd} Year Master • Industrial Engineering
2019.06 2015.09	**Harbin Institute of Technology, China** Bachelor's Degree • Civil Engineering

Skills & Languages

US Tools	Field-II, K-Wave, MUST, Aria
AI Tools	Pytorch, Tensorflow
Coding	Python, MATLAB
OS	Linux
Other Tools	Git, Conda, HPC, Latex
Languages	English B2 (work), Chinese (native), French B2 (DELF Certificate)

Projects

- Ultrasound image reconstruction by solving an inverse problem using Denoising Diffusion Restoration Models. **Innovative point**: Using a neural network to represent the prior knowledge and suit different physical models. **Presented** at the Deep Generative Models Workshop of MICCAI 2023, Code Link, Proceeding Link, Arxiv Link
- Ultrasound image despeckling by taking the variance of multiple diffusion samples. **Innovative point**: Based on the nature of multiplicative noise inherent to ultrasound, and the stochasticity of diffusion models, we proposed a new echogenicity map estimator. **Submitted** to the 32nd European Signal Processing Conference (EUSIPCO 2024). Arxiv Link(conf.), Arxiv Link(journal)
- Multi-angle planar wave 3D ultrasound imaging with physics-informed implicit neural networks. (ongoing)
- RF data decluttering using an optimized ADMIRE with hyperbolic regularization. (abstract link)
- Beamforming network enhancement by incorporating multiple regularization terms into the loss function. (code link)

Presentations

2024.03	**Ultrasound Imaging based on the Variance of a Diffusion Restoration Model.** IABM, Grenoble, France. Poster, Photo
2023.10	**Ultrasound Image Reconstruction with Denoising Diffusion Restoration Models.** DGM4MICCAI@MICCAI2023, Vancouver, Canada. Slides
2023.06	**Ultrasound Image Reconstruction with Deep Learning.** ED_seminar, Vannes, France. Slides, Video
2023.03	**Ultrasound Image Reconstruction by Solving an Inverse Problem with Denoising Diffusion Restoration Models.** AiBy4_DAY, Nantes, France. Poster1, Poster2, Slides

Awards & Certifications

- Outstanding Winner in the Mathematical Contest in Modeling (MCM 2018) (Certificate) (rate$<1\%$)
- First Prize in the Chinese Mathematics Competitions (CMC 2017) (Certificate) (rate$<8\%$)
- First Prize in the Undergraduate Training Progress for Innovation & Entrepreneurship (2018) (Certificate)
- Shenyang Eurasia Elite Mechanics Scholarship (Certificate)
- TensorFlow Developer Certification, Completion Certification in AI Deep Learning Specialization

Other Activities

2022.06	Gretsi Signal and Image Processing Summer School (Nice, France):, (Certificate)
2022.07	Deep Learning for Medical Imaging Summer School (Montreal, Canada):, (Certificate)