

Jianing Mao

Department of Electronic Engineering
Shanghai Jiao Tong University (SJTU)
800 Dongchuan Road, Shanghai 200240, China

+86-18273175968
jianing.mao@sjtu.edu.cn
jianing.mao1@gmail.com

Research Interest

Optical imaging, Optical Coherence Tomography, Scattering, Monte Carlo simulation, and OCT angiography.

Education

Shanghai Jiao Tong University, Shanghai, China

Ph.D student, Information and Communication Engineering

09/2020 ~ present

Advisor: Yuye Ling, PhD

Hunan University, Changsha, China

B.S. in Communication Engineering

09/2016 ~ 06/2020

Advisor: Yanfeng Bai, PhD

Honers and Awards

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|---|------|
| 1. ShangJun Scholarship | 2024 |
| 2. Best Paper Award in Optical Interaction with Tissue and Cells, SPIE Photonics West 2024 | 2024 |
| 3. Student Travel Grant, SPIE Photonics West 2024 | 2023 |
| 4. Best Student Paper Award, PIBM conference 2023 | 2023 |
| 5. Second Prize in "Huawei Cup" The 17th China Post-Graduate Mathematical Contest in Modeling | 2020 |
| 6. Outstanding Graduate Award of Hunan Province | 2020 |
| 7. Outstanding Graduate Award of Hunan University | 2020 |

Publication and Patents

Journal Articles

1. J. Mao, H. Su, P. Xue, and Y. Ling*, "Monte Carlo-based realistic simulator of optical coherence tomography angiography," *Biomedical Optics Express*, vol. 16, no. 1, 142-158 (2025).
2. J. Mao, Y. Ling*, P. Xue, and Y. Su, "Importance sampling-accelerated simulation of full-spectrum backscattered diffuse reflectance," *Biomedical Optics Express*, vol. 14, no. 9, 4644-4659 (2023).
3. J. Mao, Y. Ling*, P. Xue, and Y. Su, "Monte Carlo-based full-wavelength simulator of Fourier-domain optical coherence tomography," *Biomedical Optics Express*, vol. 13, no. 12, 6317-6334 (2022). (**Editor's Pick**)

4. M. Wang, J. Mao, H. Su, Y. Ling*, C. Zhou*, and Y. Su, "Physics-guided deep learning-based real-time image reconstruction of Fourier-domain optical coherence tomography," *Biomedical Optics Express*, vol. 15, no. 11, 6619-6637 (2024).

Conference Presentations and Proceedings

1. J. Mao, Y. Ling*, P. Xue, and Y. Su, "Monte Carlo-based realistic modeling of speckles in Fourier-domain optical coherence tomography," *Optical Interactions with Tissue and Cells XXXV* (SPIE, 2024), 12840: 86-91. (**Best Paper Award**)
2. J. Mao, Y. Ling*, P. Xue, Y. Su, and H. Liu, "A Monte Carlo-based full-wavelength image simulator of Fourier-domain optical coherence tomography (Conference Presentation)," *Optical Interactions with Tissue and Cells XXXIV* (SPIE, 2023), p. PC1237705.
3. J. Mao, Y. Ling*, P. Xue, Y. Su, and H. Liu, "A Monte Carlo-based full-wavelength image simulator of Fourier-domain optical coherence tomography (Conference Presentation)," in *16th International Conference on Photonics and Imaging in Biology and Medicine* (2023). (**Best Student Paper Award**)
4. H. Su, J. Mao, Y. Ling*, and Y. Su, "Data Bandwidth Improved Optical Coherence Tomography Angiography via Learnable Spectral-Spatial Sub-Sampling," *Optical Coherence Tomography* (Optica Publishing Group, 2024), CM1E. 3.
5. Y. Li, Y. Ling*, J. Mao, and Y. Su, "Robust and automated dispersion compensation for FD-OCT using fractional Fourier transform," *Optical Coherence Tomography and Coherence Domain Optical Methods in Biomedicine XXVIII* (SPIE, 2024), 12830: 17-23.

Patents

1. Y. Ling, J. Mao, "Full-wavelength signal simulation method based on Monte Carlo for FD-OCT," CN116050230A.

Teaching Experience

- **Fundamentals of Communication Circuits** Spring 2022
Teaching Assistant, with Prof. Yuye Ling, at SJTU
- **Fundamentals of Communication Circuits** Spring 2021
Teaching Assistant, with Prof. Yuye Ling, at SJTU