

CURRICULUM VITAE

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M/F: M

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Education Background

- Bachelor of Engineering (in progress, 2019-present)
- Major: Telecommunication Engineering
- School of Electronics and Information Engineering, Soochow University.
- GPA: 3.8/4.0

Summary of completed research

Host of Soochow University Undergraduate Research Fund: Research on crosstalk characteristics of weakly coupled multi-core fibers based on coupled mode theory;

Participated in the scientific research project of Shanghai Astronomical Observatory of Chinese Academy of Sciences: hydrogen atomic clock single-selected state research;

Independently undertake the project research of the supervisor's research group of our school: Compressive sensing denoising technology for Optical Coherence Tomography Angiography (OCTA).

Research Techniques and Skills

Master the writing skills of papers: I have published a SCI paper during my undergraduate period. And I also wrote a research report about the smart city (60,000 words) for Wuxi Lingxi Company, and help my supervisor to write the part of the 2022 National Natural Science Foundation of China application.

Have relatively rich scientific research experience: I participate in the supervisor's research group and spend most of my time after class conducting experiments in the laboratory. I am familiar with the whole process of the research from the proposal to the writing.

Proficient in Matlab and Python language: The programming-related projects I participated involved Matlab and Python language, so I am proficient in using Matlab for modeling, image processing and using Pytorch/Tensorflow for deep learning.

Good at 2D / 3D computer graphics such as SolidWorks, AutoCAD.

Patent & Journal list

- Obtained a new utility patent (The first inventor, on the design of the earphone charging structure)
- **Wang, L.**, Chen, Z., Zhu, Z., Yu, X. and Mo, J. (2022), Compressive-sensing swept-source optical coherence tomography angiography with reduced noise. J. Biophotonics. Accepted Author Manuscript e202200087. <https://doi.org/10.1002/jbio.202200087>.
- “Optical coherence tomography for longitudinal monitoring of artificial dermal scaffold”, Lasers in Surgery and Medicine (In Major Revision, the third author)

Research experience

1. During my sophomore year, as the host of the Soochow University Undergraduate Research Fund Project, I conducted research on multi-core fiber coupling and crosstalk. The optimized coupling mode equation of the multi-core fiber is established in Matlab for simulation analysis, and the suggestions for reducing the crosstalk between the multi-core fibers are put forward through the analysis results.
2. Since the summer of my sophomore year, I have participated in the scientific research projects of the Shanghai Astronomical Observatory of the Chinese Academy of Sciences. In the project, I was in charge of mechanical structure design and magnetic field experiment.
3. From my junior year, I have joined the research group of my supervisor to participate in the research. In the early stage, I followed my supervisor and graduate students to learn the theoretical knowledge of optical coherence tomography and the configuration principle of the optical path system. Later, I conducted research on the problems of high image noise and serious motion artifacts in optical coherence tomography angiography. Using compressive sensing technology, the acquisition speed of the device is accelerated and signal-to-noise ratio of the OCTA image is improved greatly.
4. From June 2022, I have been conducting the work about super-resolution and digital-refocusing in OCT. OCT places high demands on the lateral resolution of the sample, but this shortens the depth of focus and severely distorts images at depths outside the depth of focus (due to the point spread function). When the depth of focus is very short, three-dimensional imaging is meaningless. Therefore, we use a synthetic aperture-based method to improve the depth of focus of the system, and use a complex convolutional neural network to achieve image super-resolution in the process of image reconstruction. Our work makes full use of the amplitude and phase of the optical signal, which will make our work more valuable.

Honor & Awards

Soochow University Outstanding Learning Award;
Grand Prize of Innovation and Entrepreneurship of Soochow University;
The third prize in Chinese National University Students' Opt-Sci-Tech Competition;
The first prize in the Jiangsu Division of the Chinese National Mathematical Competition for College Students;
Honour Award of American College Students Mathematical Contest in Modeling;
Second Prize of RIGOL Cup Electronic Design Competition;
Second Prize of Blue Bridge Cup MCU Programming Contest.

English Ability

TOEFL: 107 (Reading-29, Listening-29, Speaking-24, Writing-25)