

Yongli He

E-mail: yonglihe@umich.edu
Website: <https://yonglihe23.github.io/>

EDUCATION

University of Michigan , Ann Arbor, MI	In Progress
Ph.D. in progress, Applied Physics	
M.Sc. Electrical and Computer Engineering	May 2025
GPA: 4.00/4.00	
Huazhong University of Science and Technology (HUST) , Wuhan, China	Sept.2018 - June 2022
B.Sc., Physics (<i>with honor</i>)	
GPA: 3.97/4.00 (rank: 2/167)	

RESEARCH EXPERIENCE

Functional MRI Lab , Univ. of Michigan	Dec. 2022 - Present
Graduate Student Research Assistant	<i>Supervisors: Jon-Fredrik Nielsen, Ph.D., Doug Noll, Ph.D.</i>
<ul style="list-style-type: none">• Multidimensional MRI RF Pulse Design	Developed autodifferentiation-based RF pulse design tool for spatially-selective excitation in steady-state sequence
<ul style="list-style-type: none">• Advanced fMRI image acquisition/reconstruction	Developing new image acquisition scheme/reconstruction framework for more reliable multi-echo fMRI.
Wuhan National Lab for Optoelectronics , HUST	Mar. 2020 - Apr. 2022
Undergraduate Research Assistant	<i>Supervisor: Jiang Tang, Ph.D., Boxiang Song, Ph.D.</i>
<ul style="list-style-type: none">• Quantum Dot Infrared Photodetector Design Based on FDTD Simulation• Perovskite-based X-ray Photodetector Design based on Monte Carlo Simulation	
Undergraduate Thesis Research	Aug. 2021 - May 2022
Research Assistant	<i>Supervisor: Xuebin Bian, Ph.D.</i>
<ul style="list-style-type: none">• Applications of Parallel Computing in Ultrafast Optics	

JOURNAL PUBLICATIONS

- [J1] **Y. He**, B. Song, J. Tang. “Optical metalenses: fundamentals, dispersion manipulation, and applications.”, *Front. Optoelectron.*, 15, 24 (2022). [DOI](#).

CONFERENCE PROCEEDINGS AND ABSTRACTS

- [C3] **Y. He**, L. Hernandez-Garcia, D.C. Noll, J.-F. Nielsen. “Investigating the Impact of Spatially Selective Signal Suppression on BOLD fMRI Reliability” *International Society for Magnetic Resonance in Medicine Annual Meeting*, 2025. (digital poster).
- [C2] **Y. He**, R. Fung, J.-F. Nielsen. “High-Accuracy Ultra-short Inner-Volume Saturation Pulse for 3D Steady-State Imaging.” *International Society for Magnetic Resonance in Medicine Annual Meeting*, 2024. (digital poster).
- [C1] **Y. He**, P. Liu, L. Gao, B. Song, J. Tang. “Efficient Colloidal Quantum Dot Short-infrared Photodetectors with Coupled Metasurfaces.” *International Photonics and OptoElectronics Meetings*, 2022. (Poster).

TECHICAL EXPERIENCE AND SKILLS

MRI Image Reconstruction

Model-based image reconstruction; non-Cartesian sampling (NUFFT); regularized reconstruction (TV, 11-wavelet, tikhonov, etc); spatiotemporal modeling for dynamic imaging.

MRI Pulse Sequence

Development platform: Pulseq (MATLAB)

Sequence types: GRE, SE/FSE

Sampling Scheme: 3D/SMS-EPI, Stack-of-spiral

Software Development

Programming Language: MATLAB, Python, Julia, LaTeX, Fortran, C++

IDE/Package management: VS Code, Conda, PiP

Version control: Git/Github

HONORS AND AWARDS

National Scholarship

2020

Department of Education, China

0.2% of the class nationwide

Outstanding Undergraduat Award

2020

Huazhong Univ. of Sci. and Tech.

1.5% of the class in the university

First Prize of The National College Student Mathematics Competitions

2019

Chinese Mathematical Society