Hongze Yu

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EDUCATION BACKGROUND

University of Michigan, Ann Arbor, MI   Sep 2023 – Present
- PhD Candidate in Electrical and Computer Engineering
- Advisors: Prof. Yun Jiang and Prof. Jeffrey A. Fessler
- Research Area: Quantitative MRI with Machine Learning and Optimization algorithms

University of Michigan, Ann Arbor, MI   Sep 2021 – Apr 2023
- Master of Science in Electrical and Computer Engineering
- Major: Signal and Image Processing and Machine Learning (SIPML)
- GPA: 4.0/4.0

University of Glasgow, UK   Sep 2019 – Jun 2021
- Bachelor of Engineering with Honors of the First Class
- Major: Electronics and Electrical Engineering
- GPA: 19/22

University of Electronic Science and Technology of China   Sep 2017 – Jul 2019
- Bachelor of Science
- Major: Electronic Information Engineering
- GPA: 3.97/4.00, Average Score: 90.98/100, Department Rank: 2/257

RESEARCH EXPERIENCE

Self-Supervised MRI Reconstruction using Neural Implicit Representation *University of Michigan*

Graduate Student Research Assistant, Advisors: Prof. Yun Jiang and Prof. Jeffrey A. Fessler   Jan 2023 – Present
- Developing a fast and fully Self-Supervised MRI Reconstruction method using Neural Implicit Representation
- Achieved highly under-sampled reconstruction for both Cartesian and non-Cartesian sampled phantom and in-vivo data
- Outperformed Model-based Iterative Reconstruction and Compressed Sensing and other Deep Learning Based methods

3D bSSFP Spiral Projection Imaging for Prostate MRI at Low Field *University of Michigan*

Graduate Student Research Assistant, Advisors: Prof. Yun Jiang and Prof. Jeffrey A. Fessler   Sep 2023 – Present
- Designed 3D Spiral Projection bSSFP acquisition for Prostate Imaging at 0.55T scanner and scanned NIST phantom and in-vivo subjects
- Designed task-dependent minimum time Spiral-in-and-out gradient waveforms
- Learned Siemens IDEA pulse sequence programming

Dynamic MRI of Gastrointestinal Motor Function *University of Michigan*   Aug 2022 – Dec 2022

Research Assistant, Advisors: Prof. Douglas C. Noll and Prof. Jeffrey A. Fessler
- Derived a parsimonious Spatiotemporal model based on XD-GRASP and Deformable Field methods to accurately represent cyclic phenomena including respiratory motion, and contraction motions in GI tracts for MRI reconstruction

- Developed a 3D dynamic numerical abdomen phantom using Julia and Michigan Image Reconstruction Toolbox realizing the Spatiotemporal model
- Implemented and tested 3D stack-of-radial golden-angle sampling methods and XD-GRASP image reconstruction on the developed abdomen phantom

Jacobian-Free Bilevel Methods for Image Reconstruction *University of Michigan* Apr 2022 – Jul 2022
Advisor: Prof. Jeffrey A. Fessler

- Applied Jacobian-Free backpropagation to save the memory cost and accelerate the bilevel optimization methods involving Optimized Gradient Method (OGM) for image reconstruction with Julia

Adaptive Proximal Deep Prior Methods for Image Reconstruction *University of Michigan* Jan 2022 – Apr 2022
Advisors: Prof. Honglak Lee and Prof. Michał Dereziński

- Designed an adaptive image reconstruction method combining Deep Image Prior method and proximal gradient method involving a cheap l-1 norm regularizer and greatly reduced the runtime compared to Deep Image Prior, while achieved comparable performance to other latest algorithms like DeepRED
- Implemented on different image reconstruction tasks, including denoising, deblurring, super-resolution, etc.

PROFESSIONAL EXPERIENCE

Hangzhou Hikvision Digital Technology Co., Ltd *Test Engineer* Jul – Sep 2020

- Took charge of simulating and testing entry and exit of vehicles through geomagnetic sensor simulation tools and high-position cameras, and monitoring the traffic flow and revenue of the parking lot in Cloud Parking System of three different cities
- Took responsibility for the development and testing of iOS, Android mobile apps, web, and POS platforms in Cloud Parking System

SKILLS

Programming Languages: Python, Julia, MATLAB, C
Communication: Mandarin (Native), English (Fluent)

HONORS & AWARDS

- Outstanding Graduates of Sichuan Province   Jun 2021
- Academic Scholarship of Glasgow College in UESTC (Top 5% students)   2019-2021
- Outstanding Students Scholarship in UESTC   2018-2021
- 2+2 Scholarship of Glasgow College   2019-2021