

Lixuan Chen

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Research Interests

Inverse Problems in Medical Imaging

- Dynamic 3D MRI Reconstruction, Motion Modeling, etc.

Model-based Deep Learning for Medical Imaging

- Neural Representation, Diffusion Model, etc.

Education

University of Michigan

Sep. 2024 - Now

- Ph.D. in Electrical & Computer Engineering; Advisor: [Prof. Liyue Shen](#) & [Prof. Jeong Joon Park](#)

ShanghaiTech University

Sep. 2021 - July 2024

- M.Sc. in Computer Science, GPA 3.63/4.00 (Major: 3.73/4.00); Advisor: [Prof. Yuyao Zhang](#)

ShanghaiTech University

Sep. 2017 - July 2021

- B.Eng. in Computer Science

Publications

- [Lixuan Chen](#), James M. Balter, Jeong Joon Park*, Liyue Shen* • "Prospective Dynamic 3D MRI Reconstruction via Latent-Space Motion Tracking from Single Measurement" • IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2026) •
- Xuanyu Tian, [Lixuan Chen](#), Qing Wu, Xiao Wang, Jie Feng, Yuyao Zhang, Hongjiang Wei • "Unsupervised Motion-Compensated Decomposition for Cardiac MRI Reconstruction via Neural Representation" • The 40th Annual AAAI Conference on Artificial Intelligence (AAAI 2026) • [PDF](#)
- [Lixuan Chen](#), James M. Balter, Liyue Shen*, Jeong Joon Park* • "Single-Spoke Motion-Compensated Dynamic 3D MRI Reconstruction via Neural Representation" • Medical Image Computing and Computer Assisted Intervention (MICCAI 2025) • [PDF](#)
- Xuanyu Tian, [Lixuan Chen](#), Qing Wu, Chenhe Du, Jingjing Shi, Hongjiang Wei, Yuyao Zhang • "Unsupervised Self-Prior Embedding Neural Representation for Iterative Sparse-View CT Reconstruction" • The 39th Annual AAAI Conference on Artificial Intelligence (AAAI 2025) • [PDF](#)
- [Lixuan Chen](#), Xuanyu Tian, Jiangjie Wu, Ruimin Feng, Guoyan Lao, Yuyao Zhang, Hongjiang Wei • "JSMoCo: Joint Coil Sensitivity and Motion Correction in Parallel MRI with a Self-Calibrating Score-Based Diffusion Model" • Medical Image Analysis (MedIA) • [PDF](#)
- [Lixuan Chen](#), Jiangjie Wu, Qing Wu, Hongjiang Wei, Yuyao Zhang • "COLLATOR: Consistent Spatial-Temporal Longitudinal Atlas Construction via Implicit Neural Representation" • Medical Image Analysis (MedIA)
- [Lixuan Chen](#), Jiangjie Wu, Qing Wu, Hongjiang Wei, Yuyao Zhang • "Continuous Longitudinal Fetus Brain Atlas Construction via Implicit Neural Representation" • MICCAI workshop PIPPI 2022 • **Best Paper Honorable Mention Award** • [PDF](#)
- Qing Wu, [Lixuan Chen](#), Ce Wang, Hongjiang Wei, S. Kevin Zhou, Jingyi Yu, Yuyao Zhang • "Unsupervised Polychromatic Neural Representation for CT Metal Artifact Reduction" • 37th Conference on Neural Information Processing Systems (NeurIPS 2023) • [PDF](#)
- Jiangjie Wu, [Lixuan Chen](#), Zhenghao Li, Lihui Wang, Rongpin Wang, Hongjiang Wei, Yuyao Zhang • "ASSURED: A Self-supervised Deep Decoder Network for Fetus Brain MRI Reconstruction" • IEEE 20th International Symposium on Biomedical Imaging (IEEE ISBI 2023) • [PDF](#)
- Jiangjie Wu, [Lixuan Chen](#), Zhenghao Li, Lihui Wang, Rongpin Wang, Hongjiang Wei, Yuyao Zhang • "SUFFICIENT: A Scan-specific Unsupervised Deep Learning Framework for High-resolution 3D Isotropic Fetal Brain MRI Reconstruction" • IEEE Transactions on Medical Imaging (IEEE TMI) • Major Revision

Internship Experience

Microsoft Research Asia

June 2023 - Sep. 2023

Research Intern; Supervisor: [Dr. Xinyang Jiang](#)

- Reduced artifacts caused by inevitable motion during the super-resolution ultrasound imaging.
- Proposed hierarchical motion estimation method based on automatically partitioning motion patterns.
- Applied to clinical data; evaluated feasibility by several downstream reconstruction tasks.

Bell Labs

Dec. 2020 - June 2021

Research Intern; Supervisor: [Dr. Fei Gao](#)

- Proposed a meta-learning-based approach for gesture recognition using WiFi CSI.
- Demonstrated rapid domain adaptation for new scenarios.

Teaching Experience

CS270: Digital Image Processing, Fall 2021

ShanghaiTech University

Teaching Assistant

- Designing projects, assignments, and quizzes; Grading homework and exams.

Skills

- **Programming Language:** Python, Matlab, C++, C
- **Tools & Framework:** ITK-SNAP, FreeSurfer, ANTs, Slicer, $\LaTeX$, PyTorch
- **Language:** Mandarin (Native), English (Fluent)