

Minheng Chen

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EDUCATION

University of Texas at Arlington

Arlington, TX, USA

- Ph.D. in Computer Science

08/2024-present

Southeast University

Nanjing, China

- B.E. in Computer Science and Technology

09/2020-06/2024

AWARDS and HONORS

- Graduate Dean's Research Assistantship, College of Engineering, UTA 2026
- IEEE/CVF Winter Conference on Applications of Computer Vision 2026 Award Finalists (13/832) 2026
- Outstanding Undergraduate Thesis of Southeast University (top 3%) 2024
- Outstanding Undergraduate Thesis of Jiangsu Province (35 students in SEU each year) 2024

RESEARCH EXPERIENCE

Research Assistant, Lab of Image Science and Technology, School of CSE, Southeast University, 11/2021-06/2024

PI: Xudong Bao and Youyong Kong

- Developed a CT/X-ray image registration framework and a software system for robotic navigation in minimally invasive spine surgery, obtained software copyright, and contributed to several research papers. (1 ICASSP, 2 ISBI, 1 WACV, 1 Medical Physics, 1 AIIM). Participated in the development of advanced algorithms for spinal localization, segmentation, and recognition in orthopedic surgical navigation.

Visiting Scholar, Biomedical Research Imaging Center, School of Medicine, UNC Chapel Hill, 05/2026-08/2026

PI: Gang Li

- Working with Prof. Gang Li on cortical surface analysis, with a focus on predicting cortical myelination and analyzing cortical surfaces reconstructed from in utero/ ex vivo MRI.

SELECTED PUBLICATION

10. **Minheng Chen**, Chao Cao, Tong Chen, Dunia Alhamad, Tianming Liu, Li Su, Dajiang Zhu. "Fine-Scale Individualized Gyral Folding-Based Cortical Similarity Networks Reveal Distinct Organizational Patterns in Alzheimer's Disease and Lewy Body Dementia", Imaging Neuroscience, 2026.
9. **Minheng Chen**, Tong Chen, Yan Zhuang, Chao Cao, Jing Zhang, Tianming Liu, Lu Zhang, Dajiang Zhu. "Community-Level Modeling of Gyral Folding Patterns for Robust and Anatomically Informed Individualized Brain Mapping", NeuroImage, 2026.
8. **Minheng Chen**, Tong Chen, Chao Cao, Jing Zhang, Li Su, Tianming Liu, Dajiang Zhu. "Folding-Fiducial Geodesic Representation for Morphometric Similarity Networks in Neurodegenerative Disease Characterization", IEEE International Symposium on Biomedical Imaging, 2026.
7. **Minheng Chen**, Youyong Kong. "Intraoperative 2D/3D Registration via Spherical Similarity Learning and Differentiable Levenberg-Marquardt Optimization", Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2026. **Oral, Round 1 Acceptance, 85/1329.**
6. **Minheng Chen**, Xiaowei Yu, Jing Zhang, Tong Chen, Chao Cao, Yan Zhuang, Yanjun Lyu, Lu Zhang, Tianming Liu, Dajiang Zhu. "Core-Periphery Principle Guided State Space Model for Functional Connectome Classification", International Conference on Medical Image Computing and Computer-Assisted Intervention, 2025. **Early Acceptance, Top 9%**
5. Junxian Wu, **Minheng Chen**, Xinyi Ke, Tianwang Xun, Xiaoming Jiang, Hongyu Zhou, Lizhi Shao, Youyong Kong. "Learning Heterogeneous Tissues with Mixture of Experts for Gigapixel Whole Slide Images", Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2025.
4. **Minheng Chen**, Chao Cao, Tong Chen, Yan Zhuang, Jing Zhang, Yanjun Lyu, Xiaowei Yu, Lu Zhang, Tianming Liu, Dajiang Zhu. "Using Structural Similarity and Kolmogorov-Arnold Networks for Anatomical Embedding of Cortical Folding Patterns", IEEE International Symposium on Biomedical Imaging, 2025.
3. **Minheng Chen***, Zhirun Zhang*. "Introducing Learning Rate Adaptation CMA-ES Into Rigid Intraoperative 2D/3D Registration for Spinal Surgery", IEEE International Symposium on Biomedical Imaging, 2025.
2. **Minheng Chen**, Zhirun Zhang, Shuheng Gu, Zhangyang Ge, Youyong Kong. "Fully Differentiable Correlation-driven 2D/3D Registration for X-Ray to CT Image Fusion", IEEE International Symposium on Biomedical Imaging, 2024.
1. **Minheng Chen**, Zhirun Zhang, Shuheng Gu, Youyong Kong. "Embedded Feature Similarity Optimization with Specific Parameter Initialization for 2D/3D Medical Image Registration", IEEE International Conference on Acoustics, Speech and Signal Processing, 2024.

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Minheng Chen & Zhirun Zhang, SimpleRegi V1.0, registration number: 2023SR0907053, 03/2023

SERVICES

- **Graduate teaching assistant:** CSE 3302 Programming Languages (24 Fall, 25 Spring), CSE 6389 ADV MM, GRAPHICS, IMAGE PROC (25 Fall), CSE 3380 Linear Algebra for CSE (25 Fall)
- **Conference reviewer:** ISBI 2025-26, AAAI 2026-27, MIDL 2026, MICCAI 2026, AMIA 2026, BHI 2026
- **Journal reviewer:** IEEE TMI, IEEE JBHI, Medical Image Analysis

SKILLS

Languages: Chinese (Native); English (Proficient)

Computer Skills: Proficient in C/C++, Python, Java, Matlab, LaTeX, and Office, familiar with PyTorch framework