Gaofeng Wu

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EDUCATIONAL BACKGROUND

ShanghaiTech University (Double First-Class Initiative)   *Shanghai, China*
Master of Engineering in Biomedical Engineering   *Sep 2023 - Jul 2026*
- Advisor: Associate Professor Han Zhang
- GPA: 3.46/4.0
- Award: School Outstanding Student
- Courses: Biomedical Imaging, Algorithm Design and Analysis (Python), Medical Big-Data and Artificial Intelligence, Deep Learning, Advanced Biostatistics, Digital Image Processing.

South China University of Technology (Project 985)   *Guangzhou, Guangdong, China*
Bachelor of Medicine in Medical Imaging   *Sep 2018 - Jul 2023*
- GPA: 3.3/4.0
- Award: School Outstanding Student Cadre
- Courses: Medical Imaging Diagnosis, Nuclear Medicine, Interventional Radiology, Medical Imaging Physics, Medical Imaging Diagnostic Techniques, Applications of MATLAB in Digital Image Processing.

RESEARCH EXPERIENCE

ShanghaiTech University   *Shanghai, China*
Master's student, BID Lab, School of Biomedical Engineering   *Sep 2023 - Present*

Research on "*Test-Arise: "Test-time" Domain Generalization for Multi-site Autism Spectrum Disorder Diagnosis on fMRI*"
- Designed *Test-Arise*, a "Test-Time" Domain Generalization framework for multi-site autism diagnosis, addressing domain shifts by leveraging unseen target fMRI data without retraining;
- Introduced Domain Projection and Diverse Style Simulation to align unseen data with source domain;
- Achieved an ACC of 66.67% and an AUC of 67.98% on ABIDE-I.

Research on "*Structure-Function Guided Spatiotemporal Graph Transformers for Predicting Cognitive Development Trajectories in Infants*"
- Developed STRING, a spatiotemporal graph transformer model predicting longitudinal cognitive development in infants using dynamic functional connectivity;
- Integrated structure-function, and demographic prior information to enhance prediction accuracy;
- Achieved SOTA performance on the Baby Connectome Project.

Research on "*T2T-Bridge: Direct Diffusion Bridge Model for Thick-to-Thin Slice Infant MRI Reconstruction*"
- Designed T2T-Bridge, a direct diffusion bridge model for reconstructing thin-slice infant MRI from thick-slice, enhancing clinical thick-slice data usability for research;
- Introduced structural consistency constraints and age-guided contrast adaptation;
- Enhanced resolution from 5.2mm to 0.8mm on the in-hold database (SSIM: 0.9573, PSNR: 33.3784).

Research on "*Disentangling the Heterogeneity of Autism With structural and functional MRI*"
- Develop a normative model from typically developing individuals to aid in autism screening;
- Design a dimensional model to disentangle autism heterogeneity in a continuous framework.

Research Assistant, BID Lab, School of Biomedical Engineering   *Nov 2023 - Present*
- Contributed to the Chinese Baby Connectome Project (CBCP) by collecting, preprocessing, and analyzing MRI, behavioral and EEG data;
- Managed literature and datasets to support research activities;
- Participated in drafting grant proposals.

South China University of Technology   *Guangzhou, Guangdong, China*
Research on "*Genetic susceptibility to intervertebral disc degeneration*"
Advisor: Fengjuan Lv   *Dec 2019 - May 2021*
- Wrote a literature review on the genetic factors in intervertebral disc degeneration (IDD);
- Conducted experiments with laboratory mice to investigate the role of specific genes in IDD;
- Analyzed experimental data and identified MMP-12 as a key gene in IDD.

PUBLICATIONS

1. **Wu, G.**, Zhang, W., Zhu, Z., Cai, X., Hu, Y., Tao, T., Wang, L., Tao, Y., Tang, H., & Zhang, H.. Predicting Future Cognitive Development Using Past Brain fMRI With Spatiotemporal Graph Transformers Guided by Prior Information, ISBI 2025, Houston, USA, Apr. 14-17, 2025.
2. Zhu Z., **Wu, G.**, Deng H., Tao Y., Tao T., Wang W., Wang L., Lan Z., Yang M., Wang S., Liu J., Zhang H.. T2T-Bridge: Direct Diffusion Bridge Model for Thick-to-Thin Slice Infant MRI Reconstruction, ISBI 2025, Houston, USA, Apr. 14-17, 2025 (***Oral***).
3. Tang, H., Wang, L., **Wu, G.**, Cai, X., Zhou, R., Luo, X., Liang, Y., Zhang, W., & Zhang, H.. Dynamic Gradient Modulation for Enhanced Resting-State fMRI Denoising, ISBI 2025, Houston, USA, Apr. 14-17, 2025.
4. Tang, H., Wang, L., **Wu, G.**, Jia, Y., & Zhang, H.. Deep Scrubbing: a Reconstruction-Based Approach for Automatic and Adaptive fMRI Denoising, ISBI 2025, Houston, USA, Apr. 14-17, 2025.
5. Zhu, Z., Tao, T., Tao, Y., Deng, H., Cai, X., **Wu, G.**, ... & Zhang, H.. LoCI-DiffCom: Longitudinal Consistency-Informed Diffusion Model for 3D Infant Brain Image Completion, MICCAI 2024, Marrakesh, Morocco, Oct. 6-10, 2024.
6. Deng H., **Wu G.**, Zhu Z., Gu Z., Cai X., Tao T., Zhu L., Tao Y., Shen D., Zhang H.. Generalizable Transformer-based Automatic MRI Quality Control for Infant Brain Imaging, ISMRM 2025, Digital Poster.

TEACHING AND PROFESSIONAL EXPERIENCE

ShanghaiTech University   *Shanghai, China*
Teaching Assistant, Course: **Neuroscience and Neuroimaging Practicum**   *Sep 2024 - Jan 2025*
- Guided students in MRI and EEG data acquisition;
- Coordinated the scheduling and communication for course experiments with students.

Teaching Assistant, Course: **Scientific Communication and Expression**   *Feb 2024 - Jun 2024*
- Assisted the teacher in summarizing key lecture points;
- Managed and graded student assignments.

Guangdong Provincial People's Hospital   *Guangzhou, Guangdong, China*
Medical student (on clerkship)   *Mar 2022 - Feb 2023*
- Conducted imaging examinations and drafted diagnostic imaging reports (e.g., MRI, CT, PET);
- Provided patient care assistance, including dressing changes;
- Assisted doctors during surgery.

SKILLS

- **Languages**: English (CET 4: 529, CET 6: 518), Mandarin (native).

- **Program**: Python, Matlab.
- **Software**: Freesurfer, FSL, ANTs, mrtrix3, DPABI, BrainNetViewer, R.
- **Neuroimaging Data processing**: MRI data processing (structural MRI, resting-state functional MRI, and diffusion MRI), EEG data processing.