Wei Liang

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Professional Summary

- **Deep Learning Researcher with 5 years of experience** in developing advanced frameworks for clinical applications.
- Extensive expertise in **deep learning and Med AI**, with substantial hands-on experience exploring these methods to computer-aided diagnosis and brain network analysis.
- Contributed to multiple research projects, resulting in **10+ publications** in peer-reviewed conferences and journals.

Education

Ph.D. in Computer Science and Engineering, Lehigh University, Bethlehem, PA, USA **08/2025 – present**

- **Advisor:** Lifang He
- Research Areas: Med AI.

B.S. in Biomedical Engineering, Shantou University, Shantou, China **09/2021 - 06/2025**

- **Advisor:** Xiangyuan Ma; Kangli Dong; Eric Hald
- **Thesis:** Clinical Priors and Deep Learning-Driven Breast Cancer Lesion Detection in Digital Breast Tomosynthesis. **(Best Thesis Award)**

Publications

The table below outlines the roles of specific co-authors, indicating whether they served as my advisor, clinician, or contributed equally to the work.

† Equal Contributions	
A	Advisor
C	Clinician

1. Ruiying Chen†, Yutong Wang†, Houliang Zhou, **Wei Liang**, Yong Chen, Lifang He^{A}. *SDE-Driven Spatio-Temporal Hypergraph Neural Networks for Irregular Longitudinal fMRI Connectome Modeling in Alzheimer's Disease,* American Medical Informatics Association Annual Symposium. Under Review. **Paper Link**

2. **Wei Liang**, Lifang He^{A}. *Joint Imaging–ROI Representation Learning via Cross-View Contrastive Alignment for Brain Disorder Classification,* International Conference on Medical Image Computing and Computer-Assisted Intervention. Under Review. **Paper Link**

3. **Wei Liang**†, Xiaoling Liu†, Zilong He^{†,C}, Yue Li, Yun Teng, Chushan Lin, Jiahui Jia, Qianli Zhong, Yile Bin, Jiayi Li, Xiangyuan Ma^{A}, Weiguo Chen^{C}, Yao Lu^{A}. *Glandular Distribution–Aware Pretraining for Architectural Distortion Detection in Digital Breast Tomosynthesis,* IEEE International Conference on Bioinformatics and Biomedicine, pp. 3858-3861. IEEE, Jan. 29, 2026. **Paper Link** **(Student Travel Award)**

4. Kangli Dong^{†,A}, Siya Chen†, Ying Dan, Lu Zhang, Xinyi Li, **Wei Liang**, Yue Zhao, Yu Sun. *Optimal Stochastic Tracking Control for Brain Network Dynamics,* Communications Biology, 8, 1818. Nature Publishing Group UK London, Dec. 13, 2025. **Paper Link**

5. Kangli Dong^{†,A}, Yuming Zhong†, Lu Zhang, **Wei Liang**, Yue Zhao, Jun Liu, Siya Chen, Seedahmed S. Mahmoud, Yu Sun. *Generative Network Model Reveals Different Trajectories in Brain Networks of PSA and Stroke Patients,* IEEE Transactions on Neural Systems and Rehabilitation Engineering, vol. 33, pp. 2870–2881. IEEE, July 21, 2025. **Paper Link**

6. Hongbin Guo†, Haixiong Wu^{†,C}, **Wei Liang**, Jinhuang Zhang, Xiangyuan Ma^{A}, Zibi Xu^{C}. *Deformable Midline Shift Net: Automatic Brain-midline Shift Detection using Dynamic Snake Convolution,* International Conference on Graphics and Image Processing, Vol. 13539, pp. 41-47. SPIE, Feb. 30, 2025. **Paper Link**

7. **Wei Liang**†, Haixiong Wu†,C, Hongbin Guo, Zhanyao Huang, Shibin Liang, Jinhuang Zhang, Huiling Zhang, Xiangyuan Ma[A], Zibi Xu[C]. *Pairwise Hemorrhage-Brain Region Interaction-Driven Hemorrhagic Stroke Assessment in CT,* Physics in Medicine & Biology, 70, no. 1. IOP Publishing, Dec. 10, 2024. **Paper Link**

8. **Wei Liang**†, Kangli Dong†,A, Ting Hou†,C, Zhjie Lu, Yixuan Hao, Chenrui Li, Yue Qiu, Nan Kong, Yan Cheng, Yaqi Wen, Wanyin Ma, Wenbin Zheng, Jitian Guan, Yan Lin, Kai Huang, Lu Zhang, Siya Chen, Xiangyuan Ma[A], Renhua Wu[C], Naili Wei[C]. *Exploring the Impact of APOE ε4 on Functional Connectivity in Alzheimer's Disease Across Cognitive Impairment Levels,* NeuroImage, Vol. 305, 120951. Elsevier, Dec. 4, 2024. **Paper Link**

9. **Wei Liang**†, Zhang Jinhuang†, Hongbin Guo, Huiling Zhang, Zibi Xu[C], and Xiangyuan Ma[A]. *Dual-Path U-Transformer Network for Assessment of Brain Midline Shift in Hemorrhagic Stroke,* International Conference on Graphics and Image Processing, Vol. 13089, pp. 345-353. SPIE, Mar. 25, 2024. **Paper Link** **(Best Oral Award)**

10. Zhang Wencong†, Yuxi Tao†,C, **Wei Liang**, Junjie Li, Yingjia Chen, Tengfei Song, Xiangyuan Ma[A], and Yaqin Zhang. *Automatic Segmentation of Liver Tumor from Multi-phase Contrast-Enhanced CT Images Using Cross-Phase Fusion Transformer,* Asian-Pacific Conference on Medical and Biological Engineering, pp. 121-130. Springer Nature, May 18, 2023. **Paper Link**

11. Xiangyu Li, Gongning Luo, Kuanquan Wang, Hongyu Wang, Jun Liu, Xinjie Liang, Jie Jiang, Zhenghao Song, Chunyue Zheng, Haokai Chi, Mingwang Xu, Yingte He, Xinghua Ma, Jingwen Guo, Yifan Liu, Chuanpu Li, Zeli Chen, Md Mahfuzur Rahman Siddiquee, Andriy Myronenko, Antoine P Sanner, Anirban Mukhopadhyay, Ahmed E Othman, Xingyu Zhao, Weiping Liu, Jinhuang Zhang, Xiangyuan Ma[A], Qinghui Liu, Bradley J MacIntosh, **Wei Liang**, Moona Mazher, Abdul Qayyum, Valeriia Abramova, Xavier Lladó, Shuo Li. *Automatic intracranial hemorrhage segmentation in non-contrast head CT: The INSTANCE challenge,* arXiv:2301.03281. arXiv preprint, Jan. 12, 2023. **Paper Link** **(7th place in MICCAI INSTANCE 2022 Challenge)**

Patient

1. Xiangyuan Ma[A], Hongbin Guo, Zibi Xu[C], Jinhuang Zhang, Zhanyao Huang, Shibin Liang, **Wei Liang**. *An Automatic Brain Midline Delineation and Shift Detection Method, System, and Device,* Patent Application No. 202410527688.2, 2024.

Reviewer Service

KDD'26, MICCAI'26, IJMLC

Honors & Awards

IEEE BIBM 2025 Student Travel Award **2025**
- Selected as one of 50 recipients worldwide for a competitive **$1,600 USD** travel grant.

University Fellowship **2025**
- Awarded a competitive fellowship of **$38,000 USD**.

Challenge Cup National College Students' Entrepreneurship Competition **2024**
- Guangdong Province Silver Prize.

Outstanding Scholarship **2023, 2024**
- Third-Place Scholarship
- Second-Place Scholarship

ICGIP Conference **2023**
- Best Oral Presentation Award.

8th National College Students' Biomedical Engineering Innovation Design Competition **2023**
- National Third Prize as team leader.

National Mathematical Modeling Contest **2023**
- Guangdong Province Second Prize.

MICCAI INSTANCE 2022 Challenge on Non-Contrast Computed Tomography Images **2022**
- 7th place among all challenges.

Experiences

Research Assistant - Shantou University, Shantou, China **03/2022 - 08/2025**

Computer-Aided Diagnosis Laboratory, Supported by Guangdong Research Foundation Grants, Advisor: Dr. Xiangyuan Ma

Algorithmic Engineer Intern - BGI Research Institute of Life Sciences, Shenzhen, China **07/2024 - 08/2024**

Hardware and Software R&D Centre, Advisor: Dr. Mei Li