Qiang Ma

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EDUCATION

University of Electronic Science and Technology of China 09/2023 - Present
MS in Computer Science (in progress). Advisor: Xiaoshuang Shi
GPA: 3.55/4.00

Harbin Engineering University 09/2018 - 06/2022
BS in Computer Science
GPA: 3.18/4.00

RESEARCH EXPERIENCE

West China Biomedical Big Data Center, West China Hospital 08/2024 - 08/2025
Research Intern. Mentor: Huan Song Chengdu, China

- Proposed a novel multimodal fusion framework for predicting postoperative pulmonary complications (PPCs). The model achieves superior predictive accuracy through an uncertainty-informed fusion mechanism that integrates multi-modal data features, alongside an explainable feature weighting scheme to adaptively identify discriminative clinical features. Experimental results demonstrate that the proposed framework significantly outperforms existing baselines on both the primary PPCs prediction task and four clinically pertinent subtasks. [**Uncertainty-Aware and Explainable Multimodal Fusion for Predicting Postoperative Pulmonary Complications**].

PROJECT

Heterogeneous Big Data-Driven Rapid Diagnostic Support System 11/2023 - 06/2024
Full-Stack Software Engineer. Medico-Engineering Cooperation Fund Project Chengdu, China

- Developed a real-time medical diagnostic assistant system powered by multi-source heterogeneous big data.
- Leveraged deep learning for clinical decision support, with Flask/Bootstrap/MySQL architecture managing multi-modal data.
- Core features: real-time 2D/3D imaging rendering, pre-trained model integration for dynamic disease prediction, and encrypted data pipeline with user authentication.

PUBLICATIONS

[1] **Qiang Ma**, Jinghao Xu, Tengfei Li, Xin Yuan, Xiaofeng Zhu, Xiaoshuang Shi. **Interpretable Multi-View Fusion Network for Alzheimer's Disease Diagnosis with Large-scale Pre-trained Vision-Language Model**. *Under Review.*

[2] Rui Wang, Shuting Pang, **Qiang Ma**, Huan Song, Xiaofeng Zhu, Xiaoshuang Shi. **BioTemFormer: Cross-Attention-based Transformer for Intraoperative Temporal Modeling and Multimodal Biomedical Informatics Fusion**. *Under Review.*

[3] **Qiang Ma**, He Lyu, Huan Song, Xiaoshuang Shi. **Uncertainty-Aware and Explainable Multimodal Fusion for Predicting Postoperative Pulmonary Complications**. *in preparation.*

[4] One project on multimodal uncertainty-guarding (co-author). **currently in progress**. *collaboration with Zhiyuan Wang*.