Invited Talk

KEMAI Research Training Group GRK 3012/1

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Dr. Yige Peng,
Institute of Translational Medicine
Shanghai Jiao Tong University

Bridging Modalities in Medical AI: From Multimodal PET-CT Imaging to Vision-Language Models

Abstract. Multimodal medical imaging provides essential structural and functional data, yet its complexity necessitates rigorous computational frameworks for effective cross-modal integration. This presentation outlines my research trajectory progressing from image-level analysis (e.g., PET-CT synthesis and segmentation) to the development of advanced reasoning-driven systems.

We will also discuss the transition toward multimodal foundation models for systemic health assessment, followed by an exploration of the frontier in medical Vision-Language Models (VLMs). By leveraging structured perception and complex reasoning mechanisms, these models aim to align longitudinal clinical narratives with visual data to simulate expert diagnostic logic. The talk concludes by highlighting how these scalable representation learning frameworks move beyond traditional pattern recognition toward a deeper understanding of clinical context and decision-making.

Speaker Bio. Dr. Yige Peng is a Siyuan Postdoctoral Fellow at the Institute of Translational Medicine, Shanghai Jiao Tong University. His research focuses on multi-modal medical image analysis and radiomics. He received his Ph.D. from the University of Sydney, under the supervision of Prof. Dagan Feng and Prof. Jinman Kim. During his doctoral studies, he conducted research at the ARC Training Centre for Innovative BioEngineering and Australia Royal Prince Alfred Hospital. He has also won several prizes in international medical image analysis challenges in recent years (e.g., AutoPET, UDPET, HECKTOR). He also serves in academic roles, including as a Review Editor for Frontiers in Radiology and a Program Committee Member for the IEEE International Conference on Bioinformatics and Biomedicine.

Time & Place.

Wednesday, April 15, 2026
1 pm at
O27 room 331

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