

## SEMINAR ANNOUNCEMENT

**Wednesday, 11<sup>th</sup> June 2025**

**at 14:00 pm**

**Room "Sala Seminari" - Abacus Building (U14)**

**and online** <https://unimib.webex.com/meet/luigi.celona>

### **Graph learning-based multimodal fusion for accurate and safe brain disease diagnosis**

#### **Speaker**

**Dr Hanhe Lin**

Assistant professor - School of Science and Engineering, University of Dundee – Great Britain

#### **Abstract**

The increasing availability of medical data across modalities, e.g., UK Biobank, have boosted the development of multimodal approaches that capture the complexity of human brain diseases. Compared single-modal data, multimodal data contains more information from different perspective, thereby having the potential to improve disease prediction. To effectively integrate multimodal data, graph learning-based approaches are one of examples and have achieved noteworthy performance due their ability to represent and fuse unstructured information. In this talk, I will present how we apply graph learning to fuse different sources of medical data for better brain disease diagnosis. In addition, I will present how to use federated learning and split learning to protect patient privacy.

#### **Short bio**

Hanhe Lin received his PhD degree from the University of Otago in 2016. He was then a postdoc researcher at University of Konstanz until 2021. After being a senior research fellow at National Subsea Centre in Robert Gordon University of a short period, he is currently a Lecturer in Computing at the School of Science and Engineering, University of Dundee. His research interests include visual quality assessment, medical image analysis, and machine learning. Lin has published more than 60 peer-reviewed papers in his research domains. He is an IEEE Senior member and an EPSRC Peer Review College member. He also served as a member of the technical program committee or a reviewer in numerous conferences such as ICME, ICIP, ICASSP, and QoMEX. Since 2016, he has been serving regularly as a reviewer for journals such as IEEE Trans. Pattern Analysis and Machine Intelligence, IEEE Trans. Image Processing, and IEEE Trans. Multimedia. Currently, he is serving as guest editor for the MDPI Journal of Imaging and associate editor for the Frontier in Imaging.

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