

XJTLU-XJTU-UoL Joint Doctoral Supervision Project (Full-time)

Reference No.	SFXJTU2610
XJTLU School	School of Advanced Technology
PhD Programme	Computer Science and Software Engineering
Supervisors	XJTLU supervisor: Dr Nanlin Jin and Dr Ho-Pun Lam XJTU supervisor: Professor Baibing Mi UoL supervisor: Dr Floriana Grasso
Project Title	New digital and AI-empowered research methodologies to improve efficiency of public health management 提升公共卫生管理的效率的数字化和人工智能的新型研究方法
Application Deadline	Open until the position is filled

Requirements:

A UK first-class or upper second-class honours Bachelor's degree and a UK Master's degree with Merit (or their equivalent) are required for PhD admissions. Exceptional candidates holding only a Bachelor's degree may be considered on an individual basis.

Evidence of good spoken and written English is essential. The candidate should have an IELTS (or equivalent) score of 6.5 or above, if the first language is not English.

For more information about entry requirements and admission procedures of PhD programme at XJTLU, please visit:

[Entry Requirement - Xi'an Jiaotong-Liverpool University](#)

[How to Apply - Xi'an Jiaotong-Liverpool University](#)

Other Requirements (if any):

- Outstanding programming skills.
- Outstanding data analysis skills.
- Experience in data fusion and AI agents.
 - Knowledge of public health concepts and methodologies
- Ability to work independently and as part of a team.
- Strong communication and documentation skills (in English).
- Prior experience in academic writing and/or research methodology.

The guidance of XJTLU–XJTU–UoL Joint Doctoral Programme

<https://www.xjtlu.edu.cn/en/admissions/doctoral/xjtlu-xjtu-uol-joint-doctoral-programme>

Programme Structure:

Doctoral students in the joint programme are registered with both XJTLU and the UoL. Upon successful completion of the programme, the students will be awarded a PhD degree from University of Liverpool.

During their doctoral studies at XJTLU, students are expected to conduct research at XJTU as visiting students. Additionally, students have the opportunity to apply for a three to six-month research visit to UoL.

Project Description:

In public health, longitudinal research tracks cohorts to observe health trajectories. However, conventional methods face two limitations: they prioritize cross-sectional “snapshots” over temporal complexity, and they enumerate isolated risk factors without elucidating their interactions—a critical gap in multimorbidity research, where multiple chronic conditions co-occur. These require novel computational approaches.

This project proposes dynamic multi-level Heterogeneous Graph Attention Networks to model risk factors' evolving interrelationships, focusing on multimorbidity progression. To ensure interpretability, neuro-symbolic AI will integrate neural pattern recognition with logic-based reasoning. LLM-powered AI agents will support clinical staff in data management and knowledge synthesis. The new methods will be validated on the Shaanxi Major Disease Prevention and Control Platform, using the Consolidated Framework for Implementation Research for rollout and assessment.

Joint Supervisory Team:

XJTLU supervisor: Dr Nanlin Jin and Dr Ho-Pun Lam

XJTU supervisor: Professor Baibing Mi

UoL supervisor: Dr Floriana Grasso

How to Apply:

Interested applicants are advised to email

Dr Nanlin Jin (nanlin.jin@xjtlu.edu.cn),

Professor Baibing Mi (xjtu.mi@xjtu.edu.cn),

Dr Floriana Grasso (floriana@liverpool.ac.uk)

Dr Ho-Pun Lam (ho.lam@xjtlu.edu.cn)

the following documents for initial review and assessment (Please include the project title in the subject line).

- CV
- Two formal reference letters
- Personal statement outlining your interest in the position
- Certificates of English language qualifications (IELTS or equivalent)

- Full academic transcripts in both Chinese and English (for international students, only the English version is required)
- Verified certificates of education qualifications in both Chinese and English (for international students, only the English version is required)
- PDF copy of Master's degree dissertation (or an equivalent writing sample) and the corresponding examiners' reports, if available
- A draft research proposal