

## PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of Advanced Technology
Supervisors	Principal supervisor: Professor/Dr Rui Yang (XJTLU) Co-supervisor: Professor/Dr Huiqing Wen (XJTLU) Co-supervisor: Professor/Dr Meng Fang (UoL)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Data-driven and knowledge-guided models for artificial intelligence fault diagnosis algorithms
Contact	Please email R.Yang@xjtlu.edu.cn (XJTLU principal supervisor's email address) with a subject line of the PhD project title.  The principal supervisor's profile is linked here: <a href="https://scholar.xjtlu.edu.cn/en/persons/RYang">https://scholar.xjtlu.edu.cn/en/persons/RYang</a>

### **Requirements:**

A Master's degree with Merit and a Bachelor's degree with first-class or upper second-class honors are required for PhD admissions. Exceptional candidates holding only a Bachelor's degree may be considered on an individual basis in certain disciplines.

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. This position is open to all qualified candidates irrespective of nationality.

### **Degree:**

The student will be awarded a PhD degree from the University of Liverpool (UK) upon successful completion of the program.

### **Funding:**

The PhD studentship is available for three years subject to satisfactory progress by the student. The award covers tuition fees for three years (currently equivalent to RMB 99,000 per annum). It also provides up to RMB 16,500 to allow participation at international conferences during the period of the award. The scholarship holders are expected to conduct the majority of their research at XJTLU in Suzhou, China. However, they may apply for a short-term research visit to the University of Liverpool if the project requires it.

**Project Description:**

As the complexity of industrial systems increases, the accuracy and efficiency of fault diagnosis become the key to ensuring the reliable operation of the system. This project aims to study an artificial intelligence fault diagnosis algorithm framework based on the combination of data-driven and knowledge-guided, aiming to improve the intelligent level of fault diagnosis. This study mainly relies on the powerful sequence modeling ability of the Transformer architecture, and uses its self-attention mechanism to capture the long-range dependencies in the fault data. At the same time, Foundation Model can also be introduced as a pre-trained model to learn general feature representations through large-scale data, so as to improve the generalization ability of the model in specific fault diagnosis tasks. Finally, by integrating the Deep Transfer Learning strategy to transfer the knowledge of the pre-trained model to the target domain, the problem of fault diagnosis under small sample data can be effectively solved.

For more information about doctoral scholarship and PhD programme at Xi'an Jiaotong-Liverpool University (XJTLU), please visit

<https://www.xjtlu.edu.cn/en/admissions/global/entry-requirements/>

<https://www.xjtlu.edu.cn/en/admissions/global/fees-and-scholarship>

**How to Apply:**

Interested applicants are advised to email R.Yang@xjtlu.edu.cn (XJTLU principal supervisor's email address) the following documents for initial review and assessment (please put 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 Degree dissertation (or an equivalent writing sample) and examiners reports available