

## PhD studentship (Full-time)

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| Institution          | Xi'an Jiaotong-Liverpool University, China                                                                                                                                                                                                                                                                                                                    |
| School               | School of Advanced Technology                                                                                                                                                                                                                                                                                                                                 |
| Supervisors          | <i>Please list all the names in the supervisory team. It should be consistent with the information on your approved PGRS proposal.</i><br>Principal supervisor: <b>Dr. Lingyun Yu (XJTLU)</b><br>Co-supervisor: <b>Dr. Yu Liu (XJTLU)</b><br>Co-supervisor: <b>Dr. Guangliang Cheng (UoL)</b>                                                                 |
| Application Deadline | Open until the position is filled                                                                                                                                                                                                                                                                                                                             |
| Funding Availability | Funded PhD project (world-wide students)                                                                                                                                                                                                                                                                                                                      |
| Project Title        | <b>Visual Abstraction and Composition for Complex Data Understanding</b>                                                                                                                                                                                                                                                                                      |
| Contact              | Please email <a href="mailto:Lingyun.Yu@xjtlu.edu.cn">Lingyun.Yu@xjtlu.edu.cn</a> (XJTLU principal supervisor's email address) with a subject line of the PhD project title.<br><br>The principal supervisor's profile is linked here:<br><a href="https://scholar.xjtlu.edu.cn/en/persons/LingyunYu/">https://scholar.xjtlu.edu.cn/en/persons/LingyunYu/</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:**

Real-world data are often complex, heterogeneous, and high-dimensional, making them difficult to interpret through conventional visualization methods. Existing approaches can reveal rich details, but they often rely on complex representations or multiple coordinated views that increase users' cognitive load and make it difficult to form a coherent understanding.

This PhD project will investigate AI-assisted visual abstraction and visualization composition for complex data. It will explore how AI techniques, including deep learning and large language models, can automatically distill complex data into expressive, task-relevant visual forms and combine multiple visualizations into coherent representations. The project will also examine how visualization pipelines can adapt to user intent, analytical context, and data characteristics.

The research will involve developing AI-assisted visualization methods, building interactive prototypes, and conducting user studies. The expected outcome is a set of frameworks, algorithms, and design principles that bridge machine reasoning and human cognition, enabling users to understand complex data with greater clarity, efficiency, and insight.

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/doctoral/entry-requirement-phd>

<https://www.xjtlu.edu.cn/en/admissions/doctoral/postgraduate-research-scholarships>

### **How to Apply:**

Interested applicants are advised to email.....@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