

PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of Advanced Technology
Supervisors	Principal supervisor: Professor Zhijie XU (XJTLU) Co-supervisor: Dr. Nan Xiang (XJTLU) Co-supervisor: Dr. Yihong Wang (XJTLU) Co-supervisor: Dr. Tulika Saha(UoL)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Biomechanics-Driven Modelling of Non-Rigid Registration and Large-Scale Soft Tissue Deformation
Contact	Please email Zhijie.Xu@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: http://www.xjtlu.edu.cn/en/faculty/ZhijieXu

Requirements:

A Master's degree with Merit or above is required for PhD admissions (UK system). Applicants holding a degree from 985/211/Double First-Class Universities and those with publications are particularly encouraged. Top-tier publications and/or relevant industrial experience are considered advantageous. Candidates holding only a Bachelor's degree and having less than five years of work experience will not be considered for this project.

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:

This project aims to develop advanced computational models that simulate the behavior of soft tissues under various mechanical forces. By integrating principles from biomechanics, we will create robust frameworks for non-rigid registration and large-scale deformation analysis. These models will be particularly useful in medical applications, such as surgical planning, injury assessment, and the development of personalized medical devices. The project seeks to enhance the accuracy and reliability of soft tissue simulations, ultimately contributing to improved patient outcomes and more effective medical interventions. The following objects may need to be achieved:

1. Create computational models that accurately represent the mechanical properties and behaviors of soft tissues, incorporating factors eg., elasticity, viscosity, and anisotropy.
2. Create algorithms for non-rigid registration that can align and compare medical images or models of soft tissues, accounting for their complex deformations.
3. Enhance the models to handle large-scale deformations, ensuring they can accurately predict the behavior of soft tissues under significant mechanical stress.
4. Apply these models to real-life medical scenarios with local industries.

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 zhijie.xu@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