

## PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	XJTLU: Design School University of Liverpool: School of Electrical Engineering, Electronics and Computer Science
Supervisors	Principal supervisor: Dr Lei Fan (XJTLU) Co-supervisor: Dr Cheng Zhang (XJTLU) Co-supervisor: Dr Anh Nguyen (UoL)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Semantic segmentation of point cloud data using multi-modal data fusion and deep learning
Contact	Please email <a href="mailto:Lei.Fan@xjtlu.edu.cn">Lei.Fan@xjtlu.edu.cn</a> (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/LeiFan">https://scholar.xjtlu.edu.cn/en/persons/LeiFan</a>

### **Requirements:**

The candidate should have a first class or upper second-class honours degree, or a master's degree (or equivalent qualification) in Computer Science related subjects. The candidate must consent to enrollment in the Department of Computer Science at the University of Liverpool. Evidenced ability in computer programming, especially Python, and experience in implementing machine/deep learning are essential for this project. Although not prerequisite, having knowledge and experience in computer vision, particularly related to point cloud and/or imagery data, is preferred. Evidence of good spoken and written English is essential. The candidate should have an IELTS 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 in computer science 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. Living stipends can be provided through paid Teaching Assistant and/or Research Assistant positions, where the candidate will be expected to undertake additional teaching or research responsibilities beyond the scope of this PGRS project. 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:**

Providing semantic information to point cloud data presents a critical task in many applications. Point-based segmentation methods are accurate but computational complex, making them unsuitable for handling large-scale point cloud datasets. Addressing this issue, this project aims to explore two aspects: (1) developing more efficient point-based algorithms, and (2) developing an effective image-based approach for projected point cloud data. Additional vision data beyond RGB will be considered to enhance segmentation. It involves collecting multi-modal data of urban scenes through various available sensors, conducting fusion of lidar and vision data, exploring data augmentation techniques, and developing novel deep-learning-based segmentation algorithms.

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 Lei.Fan@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