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 Lei.Fan@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: https://scholar.xjtlu.edu.cn/en/persons/LeiFan

Requirements:

The candidate should have a first class or upper second-class honours degree, or a master's degree (or equivalent qualification) in one of the following subject areas: Computer Science, Artificial Intelligence, Software Engineering, Geospatial Science, Robotics, or Data Science. *Candidates in other subject areas with research experience directly related to this research project will also be considered.* 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. 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:

Semantic segmentation of 3D point cloud data is a fundamental task in computer vision that enables detailed scene understanding for applications such as autonomous driving, robotics and smart cities. Despite recent advances, achieving accurate and efficient semantic segmentation of large-scale point clouds remains a significant challenge.

This PhD project aims to develop novel deep learning methods for semantic segmentation of large-scale point cloud data through multi-modal data fusion. The project will explore two research strategies: (1) developing efficient point-based deep learning algorithms capable of processing large-scale point cloud datasets with improved scalability and performance; and (2) investigating image-based approaches that project point clouds onto spherical or panoramic representations, enabling the use of recent advances in panoramic deep learning for 3D scene understanding.

The successful candidate will develop innovative algorithms and evaluate them using a unique large-scale benchmark dataset that has already been established by the research group (refer to the article at: https://www.sciencedirect.com/science/article/pii/S0957417426018610). The dataset contains multi-modal point cloud data with high-quality manually annotated semantic labels, providing an excellent platform for developing and validating state-of-the-art methods.

This project offers an exciting opportunity to contribute to cutting-edge research in computer vision, deep learning, and intelligent 3D scene understanding with broad real-world applications.

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