PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of Internet of Things
Supervisors	Principal supervisor: Dr Bintao Hu (XJTLU) Co-supervisor: Dr Wei Chen (XJTLU) Co-supervisor: Dr Miguel Lopez-Benitez (UoL) Co-supervisor: Dr Jianbo Du (XUPT)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Research on AI-Empowered Optimisation Scheme for Edge Intelligent IRS-Aided Space-Air-Ground Integrated Network
Contact	Please email Bintao.Hu@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/BintaoHu

Requirements:

The candidate should have a first class or upper second class honours degree, or a master's degree (or equivalent qualification), in Wireless communication, Communication signal processing, Telecommunications, Electrical, Electronic and Computer Engineering, Machine/Deep Learning, etc.

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 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 holder is expected to carry out the major part of his or her

research at XJTLU in Suzhou, China. However, he or she is eligible for a research study visit to the University of Liverpool up to six months, if this is required by the project.

Project Description:

Intelligent reflecting surfaces (IRS) are an enabling technology for engineering radio signal propagation in wireless networks. They have the ability to dynamically tune signal reflection using low-cost passive reflecting units, thereby enhancing communication network performance. Consequently, it is anticipated that the novel IRS-aided space-air-ground integrated networks (SAGINs), when coupled with edge intelligence technology, will hold significant promise for cost-effectively achieving sustainable capacity growth in the future. Despite its immense potential, several new challenges must be addressed for the efficient integration of IRS into wireless networks, including reflection optimization, channel estimation, and user privacy-preserving issues. In this project, we aim to propose an IRS-aided SAGIN and investigate the development of its reflection and channel models, resource management, and privacy concerns based on MADDPG, which will be available for IoT 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 Bintao.Hu@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