PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of Advanced Technology
Supervisors	Principal supervisor: Dr. Fei Xue (XJTLU) Co-supervisor: Dr. Lin Jiang (UoL) Co-supervisor: Dr. Xu Xu (XJTLU)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Study on Cyber-Physical Attacks in Power Grids by Artificial Intelligence and Complex Networks
Contact	Please email fei.xue@xjtlu.edu.cn with a subject line of the PhD project title. The principal supervisor's profile is linked here: https://www.xjtlu.edu.cn/en/departments/academic-departments/electrical-and-electronic-engineering/staff/fei-xue

Requirements:

The candidate should have a first class or upper second class honours degree, or a master's degree (or equivalent qualification), in Electrical Engineering.

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 80,000 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:
As a typical Cyber-Physical System (CPS), modern power system may suffer from increasing risks of Coordinated Cyber-Physical Attacks (CCPA). This project has three major contributions: (1) A novel cyber-physical attack mode based on false command injection where cyber attacks could be leading assistance to following physical attacks by inveigling system operation to vulnerable states; (2) A novel attack based on malicious power dispatch will be studied by AI learning-based method integrated with complex networks theory for false command injection attack decision; (3) Study on lurking intelligent agent which may have learning ability from stolen data and find fatal attack strategies. This project is to utilize AI technology in cyber attacking or defending strategies and decisions, as well as complex networks theory in evaluation of physical system structures. The integration of these two technologies could be promising in analysis of cyber-physical security.

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 fei.xue@xjtlu.edu.cn, 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