

PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of ...Advanced Technology.....
Supervisors	Principal supervisor: Dr. Wenjun Fan (XJTLU) Co-supervisor: Dr. Kyeongsoo Kim (XJTLU) Co-supervisor: Professor Alan Marshall.(UoL)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Investigation of Eclipse Attacks against Permissionless Blockchain P2P Networking
Contact	Please email Wenjun.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://www.xjtlu.edu.cn/zh/departments/academic-departments/communications-and-networking/staff/wenjun-fan

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, Computer Engineering, or a closely related field. Cybersecurity, networking, and distributed system background are preferred. Linux skill is desirable.

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:

Cryptocurrencies have become increasingly prevalent because of its properties such as decentralization, immutability, and anonymity. However, the permissionless peer-to-peer (P2P) networking that the cryptocurrencies rely on suffers critical security threats, since there is no cryptographic protection for the connections between the nodes/peers. Eclipse is one of the most severe threats for the cryptocurrency permissionless P2P networking. With Eclipse, a victim node will be isolated from the rest of the P2P network, which will further involve various implications. There have been a number of notable Eclipse approaches proposed for attacking cryptocurrency node on the Internet. This research project therefore aims to investigate the Eclipse attacks including the vulnerabilities, the attack approaches, the implications and the countermeasures. With such a substantial work, we intend to improve the protection for the cryptocurrency permissionless P2P networking against Eclipse attacks.

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.....@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