

### **PhD studentship (Full-time)**

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of .....Advanced Technology.....
Supervisors	<p><i>Please list all the names in the supervisory team. It should be consistent with the information on your approved PGRS proposal.</i></p> <p>Principal supervisor: Dr. Wenjun Fan..... (XJTLU)  Co-supervisor: Dr.... Kyeongsoo Kim.....(XJTLU)  Co-supervisor: Dr...Alexei Lisitsa.....(UoL)</p>
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	...Large Language Model Powered Deception Defense Approach.....
Contact	<p>Please email...wenjun.fan@xjtlu.edu.cn (XJTLU principal supervisor's email address) with a subject line of the PhD project title.</p> <p>The principal supervisor's profile is linked here:  <a href="https://scholar.xjtlu.edu.cn/en/persons/WenjunFan">https://scholar.xjtlu.edu.cn/en/persons/WenjunFan</a></p>

#### **Requirements:**

A Master's degree with Merit and a Bachelor's degree with first-class or upper second-class honors are required for PhD admissions. Exceptional candidates holding only a Bachelor's degree may be considered on an individual basis in certain disciplines.

Evidence of good spoken and written English is essential. The candidate should have an IELTS (or equivalent) score of 6.5 or above, if the first language is not English. This position is open to all qualified candidates irrespective of nationality. The candidates with expertise in networking, security and machine learning is preferred.

#### **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 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:**

The Deception Defense strategy, such as a honeypot system, is employed to draw in malicious activities, understand the attacker community's tactics, and proactively provide defense. However, there's always a trade-off between security risk and data accessibility when disclosing information system resources. To address this dilemma, this project strives to introduce an innovative deception defense mechanism, enhanced by a large language model (LLM). This LLM-driven deception defense strategy improves automatic vulnerability emulation, obfuscated shellcode analysis, and genuine shell responses. It aims to eradicate the necessity of using a real system-based decoy to entice the attacker, while enhancing attacker engagement with realistic "query-response" interactions to effectively gather useful data. ....

.....

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