PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of Advanced Technology
Supervisors	Principal supervisor: Professor Steven Guan (XJTLU) Co-supervisor: Professor Eng Gee Lim (XJTLU) Co-supervisor: Professor Jeremy Smith.(UoL)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Continual Graph Learning with Self-Awareness
Contact	Please email steven.guan@xjtlu.edu.cn (XJTLU principal supervisor's email address) with a subject line of the PhD project title. The principal and co-supervisors' profile links are shown below: https://www.xjtlu.edu.cn/en/study/departments/school-of-advanced-technology/computer-science-and-software-engineering/department-staff/academic-staff/staff/steven-guan https://www.xjtlu.edu.cn/en/about/people/leadership/professor-eng-gee-lim https://www.liverpool.ac.uk/electrical-engineering-and-electronics/staff/jeremy-smith/

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

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:

The project, titled "Continual Graph Learning with Self-Awareness," seeks to develop cutting-edge Continual Graph Learning (CGL) models. These models are designed to excel in the dynamic realm of graph-structured data, continuously absorbing new information while safeguarding previously acquired knowledge. A distinctive feature of these CGL models is their intrinsic self-awareness, allowing them to optimize their learning strategies. To understand this project better, it's essential to delve into the key aspects and objectives outlined.

- Self-Awareness Integration
- Self-Modeling Abilities
- Efficient Knowledge Integration
- Knowledge Retention and Summarization
- Evaluation Metrics and Benchmarks

2.Research Background

Graph is a fundamental data structure modeling relational data where nodes represent entities and edges represent relations. Graph learning (GL) aims to extract useful information from crucial graph properties to facilitate a series of downstream tasks. However, most graph learning methods are dedicated for static graphs, whereas graphs in the real world usually evolve continuously. A potential solution to handle this scenario is adopting a continual learning (CL) strategy upon GL. Continual graph learning (CGL) is an emerging area at the intersection between GL and CL. It aims to enable a graph learning model to absorb new information continuously without forgetting its previously learned knowledge. Furthermore, the proposed CGL method is expected to hold some sort of self-modeling ability, i.e., the model has some meta-knowledge. It can understand what and how far it has learned. Also, it knows how to improve its learning strategy.

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 steven.guan@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 (with the email addresses of these two referees)
- 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
- Journal paper publication copies if any